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ENVIRONMENT, HEALTH & SAFETY
(EHS) LEADERSHIP AND
GOVERNANCE IN HIGH RISK
ORGANISATIONS: EXPLORING
PERSPECTIVES FROM THE GULF
COOPERATION COUNCIL (GCC)
REGION

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2014

**Environment, Health & Safety (EHS) Leadership and
Governance in High Risk Organisations: Exploring
Perspectives from the Gulf Cooperation Council
(GCC) Region**

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Abstract

This exploratory research is based on an objectivist epistemology with a positivist theoretical perspective that deployed concurrent mixed methods (MMR) design through a quantitative administered survey alongside an in-depth qualitative analysis through interviews exploring the perspectives of leaders on EHS leadership and governance.

The research literature review focused on EHS leadership, corporate governance and strongly related topics. This MMR research employed both an expert panel-validated survey and a semi-structured interview protocol which explored 9 themes which emerged from the literature review including EHS/Safety Leadership; Risk Management; Influence and Accountability. Due to pragmatics relating to the number of leaders accessed (N=30) the statistical analysis is limited to descriptive type statistics.

Almost all respondents supported the monitoring role of the Board of Directors (BoD), but disagreed that the BoD should play an active role in risk management. Comparisons are drawn between the Oil and Gas and non-Oil and Gas organizations with interesting results especially in matters relating to risk management.

Structured thematic content analysis yields that Safety Culture; Leadership; Influence and Accountability were the three leading themes accounting for just over 50% of the responses analysed. Many sub-themes have also emerged and are discussed.

A Model of EHS Leadership and Governance was created and is presented which positions themes and factors that influence monitoring of EHS performance and ultimately risk management. The research can be considered as a unique contribution as a relatively small body of currently published work in this subject area, both globally and more so in the GCC.

Key Words: Safety, Leadership, EHS, Corporate Governance, High Reliability Organisations, EHS Culture, High Risk Organisations.

Dedication

I dedicate this work to the fraternity of EHS practitioners as much as I do to the leaders of high risk organizations around the world. I believe it is important and insightful work that will help bring about greater understanding and appreciation of the perspectives to the critical importance of EHS leadership and governance.

I could not have done this work without the perseverance and support of my beloved wife; she has been a source of inspiration, support and has continued to fuel my passion with her unconditional love and sacrifice.

Finally, to my father and mother for their instilling of the love and respect for knowledge and higher education. May the Lord shower them with His endless and infinite mercy and grant them the highest of orders in Paradise for their unconditional love, righteous upbringing of me and support throughout my life.

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I would like to also acknowledge the invaluable guidance of Professor Domenic Cooper CEO, B-Safe Management Solutions Inc. who is one of the world authorities in safety leadership and safety cultures. We had many insightful dialogues on safety leadership and organizational EHS culture development, methodology, methods, and analysis in the past few years.

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List of Abbreviations

ACC: American Chemical Council

ADNOC: Abu Dhabi National Oil Company

ASSE: American Society of Safety Engineers

BAPCO: Bahrain Oil Company

BoD: Board of Directors

BP: “Beyond Petroleum” previously known as British Petroleum

BSC: Balanced Score Card

CCPS: Centre for Chemical Process Safety

CEO: Chief Executive Officer

CFO: Chief Finance Officer

CG: Corporate Governance

CMA 2007: Corporate Manslaughter Act 2007 (UK Law)

COSO: Committee of Sponsoring Organizations of the Treadway Commission

CSR: Corporate Social Responsibility

DNV: Det Norske Veritas

E&P: Exploration and Production

EHS: Environment, Health and Safety

EMS: Environmental Management Systems

ENRON: ENRON Cooperation, USA – formally Northern Natural Gas Company, Bankrupted in 2001.

ERM: Enterprise Risk Management

ESI: Environmental Social Accountability

FDI: Foreign Direct Investment

GCC: Gulf Cooperation Council

GCC-BDI: Gulf Cooperation Council – Board Directors Institute

GDP: Gross Domestic Product

GRI: Global Reporting Initiative

HAZOP: Hazard and Operability Studies

HRO: High Reliability Organizations

HROT: High Reliability Organization Theory

HSWA 1975: Health and Safety at Work Act, 1975 (UK Law)

HSC: Health and Safety Commission

HSE: Health and Safety Executive

HSL: Health and Safety Laboratories

ICI: International Chemical Industries: An International Chemical Manufacturing Company

ILO: International Labour Organization

IOC: International Oil Companies

IoCA: Institute of Chartered Accountants

IoD: Institute of Directors (United Kingdom)

KMO: Kaiser-Meyer-Olkin (Statistical Term)

KOC: Kuwait Oil Company

KPI: Key Performance Indicators

LID: Lead Independent Director

LTI: Loss Time Incident

MD: Managing Director

MMR: Mixed Methods Research

MoL: Ministry of Labour

NAT: Normal Accident Theory

NGO: Non-Government Organizations

NOC: National Oil Companies

O&G: Oil and Gas

OECD: Organization for Economic Cooperation and Development

OH: Occupational Health

OHS: Occupational Health and Safety

OHSAS: Occupational Health and Safety Audit System

PDO: Petroleum Development Oman

PSM: Process Safety Management

PWC: Pricewater House Coopers (Consultants)

QRA: Quantitative Risk Assessment

RC: Responsible Care

RIDDOR: A short-hand for a Regulation in the UK on reporting Injuries and Fatalities

RM: Risk Management

SA: Social Accountability

SAI: Social Accountability International

SEP: Safety Excellence Program

SHEQ: Safety, Health, Environment and Quality

SHSI: Safety and Health Sustainability Index

SID: Senior Independent Director

SoX: Sarbanes-Oxley Act – United States of America

SRI: Socially Responsible Investments

TERM: Total Error Reduction Management

UAE: United Arab Emirates

UK: United Kingdom

UN: United Nations

WEF: World Economic Forum

Chapter 1 – Introduction

1.1 General Introduction

The Gulf Corporation Council States (GCC) in the Middle East has seen great developments since the discovery of oil resources. Oil is said to have been first struck on the 1st June 1932 in the Kingdom of Bahrain, location of the GCC's oldest oil refinery which started operating in 1936 [Clarke, 1991]. Today Abu Dhabi, the capital of the UAE, is extremely oil rich with a current estimated daily production of 2.8 million barrels per day with reserves estimated beyond 180 years. Saudi Aramco in the Kingdom of Saudi Arabia is the largest oil company in the world, producing 12.5 Million Barrels per day, employing more than 56,000 people and with revenues of 360+ Billion USD per year. (see <http://www.saudiaramco.com>). In the Sultanate of Oman, Petroleum Development Oman (PDO) operates a concession area of 114,000 Km² operating some 100 fields with 54,000+ employees. (Source: www.gulfoilandgas.com). The State of Qatar has one of the highest per capita incomes in the world. Although a small state, it is one of the largest gas producers in the world, while the State of Kuwait, also significantly oil-rich, is a major investor in many significant international investments.

In the GCC the industries relating to upstream, midstream and downstream oil and gas, petrochemicals, manufacturing, fabrication and heavy construction and aviation are mostly government supported if not government owned and operated.

Oil wealth has inspired industrial and commercial growth and much urbanization and infrastructure development. Much of the trade going from East to West or West to East passes through the Middle East's air and sea ports. Dubai is an excellent example of this. It has the world's largest man-made port, a massive industrial free zone, and as of February 2013 the second busiest international passenger airport in the world, in terms of

passenger movement (Griffiths, 2013). Emirates Airlines, the Dubai-based International Airline Company carries more passengers than any other airline (Mohring, 2013).

Given this context of considerable wealth through gas and oil stocks, the potential impact of incidents that can disrupt continuity of supply can be detrimental not only to production but to country and regional economies more generally. This is especially the case with high risk/high reliability organizations. The management of corporate risk is a key issue for all directors and senior managers and so effective corporate governance to ensure the effective management of health and safety is vitally important. This thesis's focus is upon corporate governance in high risk/high reliability organizations in this region.

1.2 Research Focus

There has been much research into corporate governance strategies and activities in the UK, South Africa and the European Union. The GCC has emerging regulations, laws and practices that are moving towards leadership, stewardship and governance rather than the more traditional 'command and control' model. Little is known about these emergent strategies, so this thesis is an exploratory study of the closely overlapping areas of EHS, Leadership and Corporate Governance, outlined in the following conceptual diagram. Figure 1 depicts these overall research areas diagrammatically.

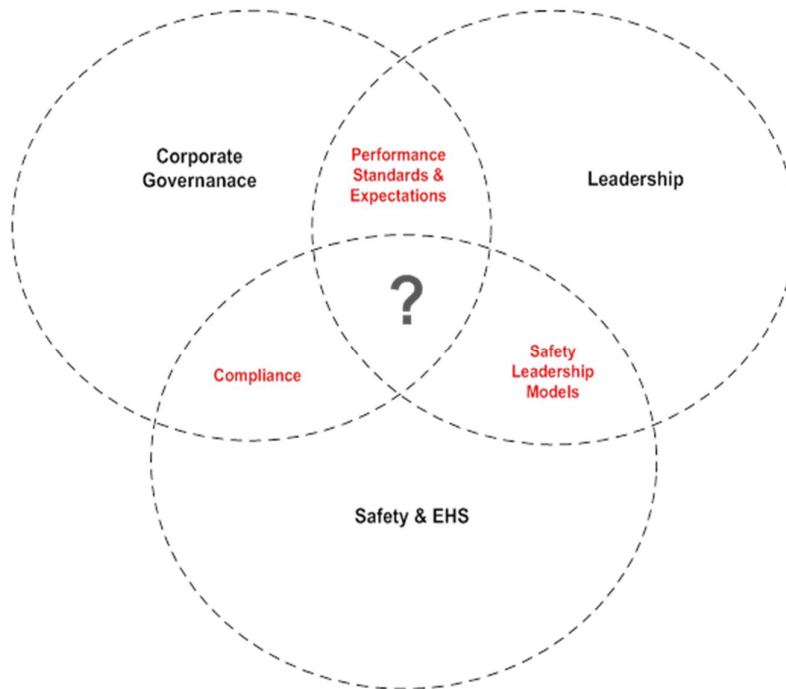


Figure 1: The EHS-Corporate Governance-Leadership Conceptual Research Areas Diagram

This thesis explores the interaction of Compliance, EHS Leadership and Performance Standards and Expectations, and in particular that area located in the very heart of this conceptual diagram. It studies the perspectives, views and points of view towards corporate governance of EHS held by the organisational leaders.

A pilot study conducted in late 2011 (see AlHashmi (2011)²) identified that it is the actions of the BoD that have an impact of EHS leadership and governance. Furthermore, the very senior leadership generally govern much organizational behaviour, culture, performance and focus. The convictions and values of the most senior managers influence EHS performance in high risk/high reliability organizations, so the study's focus is on the oil and gas, aviation, shipping, heavy construction and manufacturing industries.

1.3 Purpose and Key Objectives

Directors, in accordance with the IoD best practice guidelines (IoD, 1999) must play a role in shaping policies and as primarily a supervisory body they have the key role in monitoring and helping improve organizational performance which includes EHS performance. They must therefore play a proactive in higher-level supervisory and investigatory roles. One of their key drivers should be compliance both to the statutory laws and regulations of the jurisdiction in which their company operates, and to the company's established policies and procedures. Investigating the perceptions of CEO or board directors regarding these roles, their accountabilities and their safety leadership performance could help develop a code for corporate governance of health and safety that is applicable to the local norms of the Middle Eastern or at least Gulf Cooperation Council (GCC) state organizations. The study addresses such practices as policy setting mechanisms; procedural controls; the relationship between health and safety and other operational/financial/commercial aspects; organizational dynamics and structure, etc., and their place in corporate governance practice more generally.

1.4 Research Question, Aims and Objectives

The research question for this thesis:

What are the perspectives of the senior leaders in high risk and high reliability organizations operating in the GCC region on Environment, Health and Safety (EHS) leadership and governance matters?

The Aims and Objectives are proposed to being:

1. Develop a basic framework for understanding corporate EHS leadership and governance.

2. To undertake exploratory research to understand EHS leadership and governance in HROs in the GCC region.
3. Develop an exploratory research methodology to best investigate the current themes and evaluate if there are any other themes that exist with respect to EHS Leadership in the context of Corporate Governance.
 - Using quantitative research methods to assess the focus of senior leader's perception
 - Using qualitative methods to examine the rationale, reasoning and underpinning discourses of senior leadership
 - To combine qualitative and quantitative research methods and demonstrate the utility of such an approach
 - To explore and demonstrate how these two methods of study provide a better contextual understanding of senior leadership's views on EHS governance
4. To contribute to the development of research in EHS leadership /governance studies in the GCC and where such findings may add value to other such industries in other regions in the world.
5. To explore the potential of developing a new framework and a model for EHS Leadership and Governance which helps explain the key components.

1.5 Research Approach/Description/Methodology

The research explores the main themes driving EHS at leadership levels in high risk/high reliability organizations. It is very much exploratory research, with an objectivist epistemology with its theoretical perspective that uses a mixed methods approach including surveys and semi-structured interviews used in-parallel. The focus is predominantly on the “*qualitative*” enquiry so as to obtain a rich, in-depth understanding.

1.6 Significance of this Study/Research

In exploring the current literature, there is very little work which has been undertaken looking at perceptions of senior managers in organisations on the role that CEO's and directors in health and safety governance and leadership.

The growing importance of EHS in organizations and the significance of corporate governance standards especially in high risk and high reliability organizations, notably in the Middle East and the GCC States, cannot be underestimated. Not only is there a scarcity of studies connecting corporate governance and EHS leadership in organizations in general, the very few standards that have been developed have been drafted mainly by specialists and then phased through consultation cycles. Very little engaged scholarship type research has been undertaken in the areas which connect EHS, leadership and corporate governance (O'Dea and Flin (2001); Olive et al (2006); Cooper (2006) etc.). It is essential that we develop models that may explain the links, modalities and relationships between different drivers and perspectives that can be tested in practice. In particular the relationship between the first order relationships of EHS, Leadership and Corporate governance, and the second order relationships of compliance, performance standards and expectations and the various EHS Leadership Models, must be understood.

The author of this study is an EHS practitioner and has been working within the field of EHS for more than 16 years in various functional and leadership roles. Previous studies undertaken by the author led to his belief that directors need to take the time to better understand what the EHS key performance measures mean, to study the impacts, direct and root causes of incidents, and to become engaged in general. It was those earlier studies that inspired the research undertaken in this thesis. The author is in a position to use the findings from this study to conduct further development work.

It was established in previous work that the drivers behind the policy setting mechanisms is significant and may be one of the most important aspects that should be explored further with directors and CEOs. In addition, exploration of the legislative and corporate governance debates are essential to better inform the right level of knowledge and engagement expected from directors in the policy setting mechanisms and how they directly impact on effective safety performance, loss prevention and operational excellence on an organization.

In that context the author explores further these various aspects as well as the impact of organizational structure and risk management in an elaborated thesis study. It was felt even at the time that further research and literature review was required to better design what was most probably going to be an exploratory inductive-type mixed methods study which will involve investigating some of the work findings from the pilot study undertaken with senior managers with a more focused group of CEO/MDs and board directors directly.

1.7 Thesis Structure

The structure of this Thesis is conventional as follows:

- ◎ **Chapter 1:** Is a general introduction about the regional focus and the practical context of this research work; discusses the conceptual model developed for this study; discusses in some detail high risk and high reliability organizations; explains the research questions of this work; describes the methodology briefly; and explains the value and significance of this research.
- ◎ **Chapter 2:** Is an in-depth enquiry using desk-based research into the historical development of corporate governance and EHS leadership and organizational EHS culture development. This chapter addresses the changing face of organizations operating within high risk and high reliability environments.

- ◎ **Chapter 3:** Continues the desk-based research and addresses the more contemporary issues for EHS leadership in organizations. It addresses the aspects related to EHS and its relationship with corporate social responsibility, social accountability, sustainability and voluntary reporting on EHS performance. It also discusses effective company boards and the relationship with CEO/MDs; organizational structure and effective safety communication and risk management. It concludes with a reflective discussion section and suggests the themes that have emerged from the literature review that create the foundational framework for this research.
- ◎ **Chapter 4:** Discusses methodology. It is perhaps one of the most interesting parts of the study for the author as it defines doctoral practice from standard engaged scholarship and discusses with some detail the role of mixed method research and its real importance in the context of this exploratory research work.
- ◎ **Chapter 5:** This chapter presents the data and data analysis from the quantitative part of the research.
- ◎ **Chapter 6:** This chapter presents the data and data analysis for the qualitative research.
- ◎ **Chapter 7:** Brings the whole research together. Whilst the focus is on the discussion of the results, other aspects such as implications of the research findings; demonstrating the importance, significance and true value of engaged scholarship in exploratory management studies; and the researcher's reflections are also added to add both robustness and in light of the author's personal professional experience context to the research work. The chapter ends with the presentation of the *Model of EHS Leadership and Governance*.
- ◎ **Chapter 8:** Summarizes the whole research findings, discusses the limitations of this research, explains the contribution it makes to both academia and management and explores where scope for further research and engaged scholarship exists.

Chapter 2: The Changing Face of Organisations Operating within High Risk/High Reliability Environments

2.1 Introduction

This research thesis explores Environment, Health and Safety (EHS) leadership in organisations through the perception of the leaders themselves from the context of corporate governance and leadership. The thesis has two literature review chapters that explore current understanding about this topic.

The findings of the literature review are summarised in a model that illuminates how the 9 themes that have been established are related to each other as factors. Chapter Two explores corporate governance and provides a historical review of its development; EHS management and EHS leadership in organizations and the legal and regulatory imperatives and organizational EHS leadership issues. Chapter Three explores the board's leadership role and the relationship between the chairman and the CEO/MD. Not only academic and professional publications, research papers and research reports are reviewed, but also best practice standards and some of the guidance and articles from professionals working in these areas.

A very wide range of literature is therefore analysed although much of it is from outside the GCC region. Chapter Three's conclusion brings together the themes from this wide-ranging literature review into a model that encapsulates current thinking about EHS leadership in high-risk organisations. **This model is not one that will be tested, but rather will later be compared with a model that emerges from empirical research of EHS leadership in high-risk organisations in the GCC.**

Setting the scene

EHS has become more critical for organizations because of negative impacts including both direct financial effects with immediate losses and longer term business effects such as shareholder confidence, public distrust, class-action and financial compensations and penalties [Lukic et al, 2010]. However,

EHS developments have become too complex for business managers to understand at times. Even the links of incidents with their direct, related and root causes as well as the cause and effect of business decisions made which may have attributed to the losses and impacts are not fully understood. The same probably applies to Sustainability, Corporate Social Responsibility (CSR) and Enterprise Risk Management (ERM). MacLean (2001) explains that it is because of this growing complexity and interactivity that EHS professionals and managers/directors are finding themselves working ever more closely with the strategic business planning functions in corporations.

The costs of HSE incidents to industry are great. They encompass *Direct Costs, including*: Medical; Compensation Insurance; Legal Fees etc. and *Indirect Costs*: Uninsured costs; Employee Morale; Time Lost at work; Loss of experience; Economic Loss due to injured person's family; lost time in investigations as well as many others [Al-Ahmari, 2010]. To put things into global context: between July – December 2012 (i.e. over a span of 6 months) alone there have been; 6 Major Petrochemical Explosions and Fire; 6 Major and Serious incidents in E&P Offshore Incidents; 1 Very Serious Onshore incident; 2 serious incidents in Fertilizer Plants; 3 Major and Serious incidents in Gas Plants; 19 Refinery incidents ranging from significant to Major incidents. The losses combined are in hundreds of millions and there have been fatalities and major injuries. [Marsh, 2013].

There have been many changes in the Arab World and the GCC states in the past 30 years. Those of the past 3-4 years are probably most significant partly because of the strong tides of socio-political changes with underpinning socio-economic drivers (e.g. younger population seeking job opportunities) [PRB, 2007]. At the same time much more focus is placed on matters such as CSR, nationalization, transparency and national and international companies are expected to clearly show their (mainly socio-economic) contribution as corporate citizens. These changes can be regarded as risks. Other major risks are talent management matters (or human capital development); business continuity and more holistic enterprise risk management. In the energy sector alone, the expectations are that

energy demand in the Gulf region will increase by 150% by 2030 and this will place even greater pressures on energy supply companies and other associated secondary industries such as manufacturing, power and utilities, aviation and the transport and logistics sectors [Mckellar, 2011]. An emerging risk is the requirement to apply HSE standards, but these vary between jurisdictions, and the lack of uniformity has deterred organizations from entering and operating in certain markets [Richardson, 2013].

Globalization has also had an impact on Arab and specifically the GCC economies. Traditionally these economies have been centrally controlled, but with a breakdown of economic boundaries have come an increase in power of markets driven by multinationals, technology and changing economic factors. This has led to the need for a more informed leadership within the major industries within the GCC, with perhaps more engaged and informed boards [Major, 2005]. A major benchmarking study undertaken in the O&G sector shows even very large National organizations such as the Abu Dhabi National Oil Company (ADNOC) has seen great development of reform in terms of corporate governance [Booz & Co, 2001]. In 2010 the GCC - Board Directors Institute (GCC-BDI) was established as a not-for-profit organization dedicated to making a positive impact on the economies and societies of the GCC states and region through promotion of professional directorship and raising the level of board effectiveness. The founding members are from both the financial and industrial sectors and there are professional content partners representing four of the most well-known international business consultancies, regulatory partners and corporate affiliates representing both the financial and industrial sectors. Their workshops focus on raising Board Directors' awareness on matters including strategic risk management, legal imperatives for board directors and leadership matters [see <http://www.gccbdi.org>].

This also has led to an emerging risk where organizations have to apply HSE standards which vary in different jurisdictions, so even applying a particular “best practice” may not be suitable in a certain jurisdiction. This has even

deterred organizations from deciding to enter and operate in certain markets [Richardson, 2013].

Carey and Patsalos-Fox (2006), explain that after many serious corporate governance standards have come into effect such as the US based Sarbanes-Oxley Act (SoX) the demand for academics, non-profit organization executives, and retired executives to be engaged as Board Directors has increased dramatically. The Organization for Economic Co-operation and Development (OECD) in 2012 developed a voluntary standard on Corporate Governance and Process Safety Management (PSM) that focuses on high risk industries [OECD, 2012]. The document concludes with a model in which leadership is the heart of the model. Progressive companies now seek to fill 30% of Board seats with seasoned professionals and specialists with expertise in corporate social responsibility (CSR).

Literature Review

The literature review addresses corporate governance, law, EHS leadership and EHS culture, as all are necessary for understanding the topic of this thesis. The aim of this review, in this chapter and the next, is to develop a basic framework of key themes emerging from current work around safety leadership and culture; corporate governance; legal imperatives for EHS; risk management, sustainability etc.

2.2 High Risk & High Reliability Organizations (HROs)

The concept of High Reliability Organizations sits very much in the theory that accidents can be prevented through good organizational design and management/leadership [Bibbings, 2010]. One of the most comprehensive studies undertaken recently defining High Reliability Organizations is the HSE Laboratory (2011) study *“High Reliability Organizations – a review of the literature”*. In this work the definitions start from the context of the two (competing) prominent schools of thought that seek to explain accidents in

complex, high hazard organizations: (1) Normal Accident Theory (NAT) and High Reliability Organization Theory (HROT).

In NAT, the definition is very straight forward and depicts the tight coupling of various aspects and system components (e.g. people, equipment, procedures) and that due to the complex relationships and interdependencies of these tightly coupled and often highly automated systems whereby the timing of tasks does not even allow for human intervention. The authors quote *Perrow (1984)* who explains that when a failure occurs in one part of the system that quickly spreads to another part of the system and you have a massive failure. Interestingly, Perrow classified petroleum/petrochemical plants such as refineries as lower risk when compared to military systems and aircrafts etc. This theory was highly criticized mainly for its failing to be consistent in accurately capturing and differentiating between the design features of systems in these industries and ignoring the conditions in which complex systems do not fail. Also others have identified the weakness in the definitions of the theory itself through its coupling and complexity terminologies. Its currency is also of little value to practitioners as it fails to be able to help advise and suggest how accidents can be reduced [HSL, 2011].

In essence, the NAT describes more the consequences of the human-machine interface actions where the source of failure is more physical and/or technological. In contrast, the HRO can be described as more “in response to” uncertainty, complexity, risks and here the focus is more on the behavioural and socio-physical aspects [see <http://high-reliability.org>]. The socio-physical dimension is created from the tight coupling between the human being and the machine/physical processes.

The definition of HROT addresses the criticisms of NAT. This theory focuses mainly on the position that accidents in complex systems are neither not avoidable nor invertible. This is because of the processes in place that enable high hazard organizations to effectively prevent incidents and contain catastrophic errors from actually occurring and thus maintaining a consistent record of safe operations. In fact HRO researchers maintain a positive view

with regards to the nature of accidents in complex systems by arguing that organizations can become more reliable by creating or engineering a positive safety culture and reinforcing safety-related behaviours and attitudes. What is very interesting here is that HRO researchers maintain that such organizations are not error-free as much as they are pre-occupied with failure and prevention of that failure and how to deal with failing systems. As such, and most significantly such organizations exhibit **strong learning orientation, prioritization of safety over other goals, continual training and development** and an emphasis on **checks and maintaining the safety performance**. To this end, they also explain that HRO perspectives have much in common with resilience engineering which are systems employed extensively in the aviation, petrochemical and the nuclear industry. However, the HROT has also had its fair share of criticisms for its ignoring of the broader social and environmental contexts to learn from errors. Examples quoted included the (corporate) political implications of errors that may impact on the extent to which errors can be openly reported. It is important to understand the actual characteristics of HRO which are summarized in the table below.

Table 2.1: Attributes of a HRO (Adapted from HSE Laboratory, 2011)

No	Characteristic	Implication
1	<i>Dynamic Leadership Shift</i>	Whilst decision making is hierarchical during routine periods with clear responsibilities during emergencies, the organization does migrate to a structure which leverages on the members within the organization who have the expertise.
2	<i>Systematic Intervention</i>	They manage by exception and thus managers focus of strategic and tactical decisions and interfere seldom with operational issues which are delegated and covered by clear processes.
3	<i>Learning Organization</i>	Climate of continuous training and learning.
4	<i>Multi-Communication</i>	Several channels are used to communicate safety critical information – timely communication of information during normal and emergency situations
5	<i>Redundancy</i>	In-built redundancy and the provision of back-up systems in case of a failure.

One recently published definition of HROs is one *“that produces product relatively error-free over a long period of time”* [OECD, 2012; Page 12]. Two key attributes are described including having *“a chronic sense of unease”* and therefore lacking the sense of complacency. They as such can be described as believing that an incident can happen at any time even if no incidents have taken place for a very long time. The second important attribute is to *“Make strong responses to weak signals”* and therefore to set a low threshold for intervention. This generally means that they will go to the extent of shutting down operations to investigate effectively more often which whilst may mean financial losses, they see this as an essential risk control measure to prevent a much bigger potential loss.

HSL (2011) have noted that resilience in HRO can be engineered by incorporating the following characteristics that include: (1) Just Culture promoting transparency in reporting of incidents and improvements with a great balance between supporting the reporting culture and tolerating unacceptable behaviours; (2) Management commitment which balances the pressures of production with safety and management behaviour/allocation of resources; (3) Increased flexibility through supportive systems and empowerment; (4) Learning culture in which information is shared, regular effective training is undertaken and there is development of critical safety information; (5) Preparedness through proactive safety management systems; (6) Opacity/Awareness through organizational collection and analysis of information that enables the organization to identify hazards and risk early and deal with prevention and finally (7) Resources – if the form of competent staff, systems, technology and additional resources to help prevent incidents and deal with them when they happen.

This is consistent with AlHashmi (2012) model of Safety Culture in which *Awareness* borne from *Information Sharing* and *Training* as well as *Autonomy/Management Support* factors are all indicators of a Safety Culture. More is discussed with respect to Safety Culture later in this chapter, because it seems that there are similarities between Safety Culture and High

Reliability within an organization. They share many similar attributes, only that the HRO definition is probably more encompassing.

Al Hajri (2008), in a case study paper about Al Jubail Petrochemical Company (KEMYA) explains how that management commitment and leadership are the key drivers for the KEMYA BBS behavioural based safety program. Linked the safety performance, management performance to PSM and the Operational Integrity Management System leading to their Safety Excellence Program (SEP). Operational Excellence is a function of high reliability and will be discussed later.

Because the process, manufacturing, aviation industries etc. are not only inherently risky but also highly dynamic and with risks arising all the time with changing conditions and environments, maintaining high reliability becomes a fundamental cornerstone of the very viability and sustainability of that business. HRO generally develop their strengths through the actions of individuals who share highly aware and safe attitudes within their organizations which in turn over time creates an organizational culture which can be described as a High Reliability Culture.

<http://high-reliability.org> offer four fundamental organizational characteristics which help HROs control the number of incidents that take place. These include (1) *an organizational prioritization of safety and the share performance goals throughout the originations*; (2) *An organization culture of reliability (as described above)*; (3) *The learning organization which uses higher orders of learning to continually improve*; and (4) *“a strategy of redundancy beyond technology”*.

But there is a real difficulty with defining HROs mainly because of the very fact that incidents occur all the time in organizations as near-hits or as commonly referred to in the industry as near misses. The majority do not eventually become an accident i.e. these incidents do not result in loss of some kind. The question of defining HROs quantitatively raises this issue with many of the definitions as an industry benchmark is required, be it in the

aerospace, aviation, oil and gas, manufacturing or other industries. So statistically if a near-accident free performance is achieved then perhaps that particular organization can be described as a HRO.

The above does also mean that statistically, reliability can be “calculated” but this would be a function of uncertainty. This is a fundamental issue in this whole study. If and when HRO’s are defined statistically there is a degree of engineering/technical/mathematical accuracy, but the factors related to organizational and social matters bring about greater uncertainty to some extent [Marais et al, 2004]. This probably explains why at the heart of the OECD PSM/CG model were both leadership and (organizational) culture.

Hopkins (2002) reviewed extensively the five characteristics of HROs defined by Weick and Sutcliffe (2001): (1) preoccupation with failure; (2) reluctance to simplify interpretations; (3) commitment to resilience; (4) sensitivity of operations; and (5) deference to experience with the encouragement of a fluid decision-making system which they had described collectively produced a collective state of mindfulness which was key. Whilst Hopkins (2002) supported their views he also said that the challenge in defining HROs thus lies in the very fact that a detailed enquiry looking at these five areas would be required and this was highly dependent on the industry within a context of time.

Rooksby (2010) explains that Managers in HROs work closely with their subordinates about their work actions rather than just focusing on figures related to bottom-line performance. Therefore in a way it is enhancing performance through creating learning organizations. It is worthy to note that given the above some researchers have found that the HRO researchers have oversimplified to some extent what complexity and difficulties are faced by engineers and scientists and have suggested an alternative systems approach to safety which tries to overcome the limitations of both the NAT and HRO theories [Marais et al, (2004)].

The human element remains critical and as noted by Bridges (2010) weak management systems compounded with human errors are what causes incidents. Therefore, human factors must be understood very clearly in the prevention of incidents. OH performance standards, Training and Competency, Task Design; workforce rationalization and time motion studies to determine the safe manning levels; task-human-system interaction etc. all help strengthen PSM system.

In a recent and dynamic study of an oil refinery in the UK which apparently was actively working towards achieving higher levels of reliability and safety (which was in part a reaction to the review of the Texas City explosion in 2005); the researchers identify four fundamental areas or themes emerged from both 1-to-1 and focus group interviews which included *Training and Technical Competence*; *Hazard Identification and Awareness*; *Learning Orientation* and *Strong Management Commitment to Safety* [Lekka & Sugden (2011)]. The same study concluded that whilst there were some highly progressive practices – **management commitment** and more importantly high levels of **management visibility** remained the two most critical challenges faced by organizations striving to implement high reliability practices.

Finally, if it is the case that HROs have a migratory decision making processes that allow those who are closer to an incident to react to prevent escalation or otherwise “the empowerment within the hierarchy” to those who would be better informed (or more knowledgeable), the leadership model within these organizations would have to be highly empowering. However, under normal conditions it would also need to be highly engaged and have an appreciation of the risks and challenges faced within the day-to-day operations of the organization [HSL (2011)].

The leadership from the top must then be very trusting, but would, within the context of operational integrity, need to expect inherently highly reliable operations. This is particularly the case with operations such as oil and gas; power and utilities, aviation etc. This would mean that operations are

managed within a reliable integrated management system, where the changes in response can be rapid enough to deal with any fast occurring developments. This also requires that managers at all levels starting from the top of the organization are trained to manage and respond and this can only be achieved through structured systems, training and drills.

It could be argued in conclusion that a culture of high reliability must be driven by the Executive Management Team and the Board of Directors who would set the tone as an expectation.

2.3 Corporate Governance & Historical Review of Developments

The increasing importance of Corporate Governance was noted above, especially following the collapse of ENRON and investors' concerns about their investment. Dunlop, (1998) explains that the systems of Corporate Governance and Control have also come under great scrutiny in recent years with organizational investors demanding effective controls to be put in place to ensure the discipline required to prevent the risk of loss of their investments. After the collapse of ENRON, Breeden (2003) presented an extensive report to the US Government with 78 individual recommendations covering many issues including directors' qualifications and risk management.

Recent developments which *Michael Jensen (1993)* [quoted in Chew & Gillan, 2005 – Page 16] explains “*has changed the economic landscape as rapidly as within the 19th Century Industrial Revolution*”. These are the rapid changes in technology and organizational aspects which completely altered many models in production and labour markets. Companies have grown in size necessitating new forms of management (Kendall & Kendall, 1998), more sophisticated systems, explain that this was attributed to the growth in the size of companies and with much higher production scales which led to shareholders ceasing to manage these organizations and hiring professional managers instead. Technological advances also brought about economies of scale which contributed to this growth in organizations. These professional

managers moved to eventually becoming board members with time; and changes in the board member's role towards an important "advisor" to the shareholder.

Another important observation is that organizations have moved over the years from being small and medium size enterprises and as organizations become bigger they start to require a greater degree of planning, accounting, operational management and systems in all its various functionalities [Leavy & McKieranan, 2009]. This has led to the development of more regimented systems with process mapping, procedures and checklists. As Collins (2001) explains, these systems are usually employed in response to a senior person within the organization and generally when a company board demands that a hierarchical and systematized organization is to operate, one in which better corporate monitoring and control can be exercised. This carries the threat of inhibiting innovation as many of the operations become so systematic and need to follow strict guidelines and procedures that bureaucracy is brought into being.

These systems generally emerge to compensate for incompetence, inconsistencies (which cannot be tolerated in certain high risk industries such as aviation and oil and gas) and generally what can be described to be a lack of discipline. To become a "great" organization a balance between a high *Ethic of Entrepreneurship* and a *High Culture of Discipline* has to be created. It may be considered significant that *"The good-to-great companies built a consistent system with clear constraints, but also gave people freedom and responsibility within the framework of that system. They hired self-disciplined people who didn't need to be managed, and then managed the system, not the people"* [Collins, (2001), page 125].

Governance and control systems by their very nature are constraining, or at the very least establish certain requirements and expectations that have to be fulfilled by people who are then measured against these performance criteria. This creates accountability and even a culture of responsibility. A greater degree of clarity is now demanded of managers and directors. Zukis

et al (2010) explain that the internal control framework provided by the *Committee of Sponsoring Organizations of the Treadway Commission* (COSO, 2004) has led to organizations in the US now leveraging this framework and recommendations **beyond financial reporting**. They must: *“(1) Develop a functional model identifying business processes (i.e. a Process Classification Framework) so that a well-defined policy and procedure framework exists then (2) Support the framework with established processes to continually evaluate, update and communicate policy changes throughout the organization and (3) Leverage this framework consistently across the organization in support of various business processes”* [Zukis et al (2010), Page 2].

The “focus on fulfilling objectives through better risk management” is at the heart of the risk management process [IoCA, 1999]. The Turnbull guidance on the Combined Code Corporate Governance requires that companies **have robust systems of internal control going beyond financial risks but looking more holistically at risks relating to the environment, health and safety and also business reputation** [HSE/IoD, 2008].

Many boards have now established ethics subcommittees (sometimes called supervisory committees) to overview the behaviour of board members and ensure the highest standards of compliance [PWC, 2005].

Defining Corporate Governance

Corporate Governance has been defined differently in different countries (Kendall & Kendall, 1998). One definition is that Corporate Governance: *“...is to be seen to be acting responsibly, and informing all interested parties, or stakeholders, of decisions which will affect them”* [Kendall & Kendall (1998), Page 18-19]. McGregor (2000), page 11 offers an alternative definition: *“Governance is the process whereby people in power make decisions that create, destroy or maintain social systems, structures and processes”* [McGregor, 2000, page 11].

Bain & Band (1996) have not given an exact definition but have explained that it is about ensuring that *“the proper standards are installed within an organization”*. In their survey work respondents (managers) came with many different definitions including *“Having an appropriate pay policy for senior people in industry”*; *“providing checks and balances to avoid excesses of top bosses”*; *“A set of procedures to protect the organization from fraud or loss due to poor practice”*; *“Providing checks on the management thus protecting shareholders”*; *“Curbing the worst excesses of a greedy managing class”*; and *“Providing a control climate suitable to the organization”*.

They go on to quote *“Instead of episodic, confrontational challenges for control, CEOs and directors will find themselves subjected to continuous, on-going scrutiny from both active investors and major long term institutional investors, who will seek to engage in substantive debate about specific corporate policies and overall corporate performance....The new governance process is based on continuing dialogue and debate among key, long-term institutional and other investors about specific, substantive aspects of corporate policy.”* [Bain & Band, 1996, pages 2-3].

Another definition is *“Corporate Governance is the process of serious decision-making at the controlling heart of the organization. For most practical purposes, this means the board and the CEO and the ultimate arbiters.”* [Leavy & McKieranan, 2009, page 46].

In the UK, in 1992 the Government-commissioned Cadbury Committee Report on Financial Corporate Governance of Companies focused on the role of the Chairman, CEO and directors (especially the role of independent directors), but it also reflects some of the aspects that relate to the non-financial aspects of the decisions made by organizations [Clutterbuck & Waine, 1993].

The simplest and most comprehensive definitions: *“Corporate governance is the system by which companies are directed and controlled”*. Boards of directors are responsible for the governance of their companies;

shareholders appoint the directors and auditors and must satisfy themselves that an appropriate governance structure is in place. The responsibilities of the board include setting the company's strategic aims, providing the leadership to put them into effect, supervising the management of the business and reporting to shareholders on their stewardship. The board's actions are subject to laws and regulations [Cadbury Committee Report 1992, Page 14].

The Sarbanes-Oxley Act in 2002, (SoX Act) and other reforms have tried to encourage greater Boards involvement in the understanding of management performance and other best practices including:

- (a) Having independent directors in the majority;
- (b) Tightening the standards for independent directors;
- (c) Restricting the audit committee composition and expanding its responsibilities;
- (d) Requiring that compensation and nominating/governance committees are comprised entirely of independent directors and granted specific responsibilities;
- (e) Convening regular executive sessions restricted to the non-management directors;
- (f) Performing regular Board and Committee evaluations;
- (g) Others. [Millstein & MacAvoy (2003)]

On initial review of the various codes that have been developed in various countries (e.g. UK, The Cadbury Code 1992; then later the Turnbull Committee Report 1999 and in the USA, the Sarbanes-Oxley Act 2002; South Africa, The King, I, II and III (King 2009) it is clear that the concept of Corporate Governance has grown in importance in the past 20 years, with greater transparency being demanded by stakeholders as well as shareholders. Countries such as South Africa which applied an effective code of practice (see King I, King II and King III), have seen companies enjoying greater foreign direct investment (FDI) with the benefits of greater confidence

of the investor. There has been much discussion and also debate in the USA between various institutions regarding the Sarbanes-Oxley Act (SOX) which was passed soon after the Enron collapse/scandal. The Act operates in a “Comply or Else” principle which has been very much argued to be ineffective in adding a holistic value to corporations. It is said that for instance the cost of compliance to SOX in the USA amounts to what is greater than the total write-off amounts on Enron, World Com and Tyco combined. [King, 2009].

Chew & Gillan (2005), in reference to Brinkley et al (2002), explain that corporate governance can be described through its most important facet – organizational design and architecture. It has three key elements: (1) The assignment of decision-making authority i.e. who gets to make what decisions; (2) Performance Evaluation i.e. how is the performance of employees and their business units measured and; (3) Compensation Structure i.e. how are employees (including senior managers) rewarded or penalized. But there is growing appreciation of the softer issues of governance, requiring a greater understanding of human nature and behaviour [McGregor, 2000]. This subject is discussed below.

Thomsen (2005) studied variances in corporate values. He concluded that structure and governance impact on corporate values, and there is little relationship between values and profitability. However, Ayuso et al 2007 drew different conclusions, finding evidence of a positive relationship between CSR, country location, board diversity and stakeholder engagement and a firm's financial performance.

Millstein & MacAvoy (2003) recommend many reform proposals to Boards to strengthen their purpose and make them more effective. Below is an action table developed based on their 9 initiatives suggested:

Table 2.2: Initiatives Suggested to Improve Board Performance

Initiative	Description*	Implementation
1	Separation of the Role of the Chairman and the CEO and designate an independent Director as Chairman.	Shareholder/ Stakeholders
2	Determination of the satisfaction that management has appropriate processes in place to prepare the certification required by the SoX Act.	The certification is a legal requirement by the Act – but it is good practice – Action for the Board of Directors
3	Boards should take responsibility for their company strategy, risk management and financial reporting based on the company's business environment, challenges, and opportunities and should carefully construct compensation arrangements to reward extraordinary company (no market) performance.	Action for the Board of Directors under clear leadership of the Chairman.
4	Boards should assure themselves of the integrity of management.	Primary Action by Board Committee's appointed Chairmen with the Board Chairman.
5	Board should structure meetings so as to ensure that issues central to the performance of the company are given sufficient time, and that management presentations concerning such issues present options and not simply reports.	Board Secretary under clear leadership of the Chairman.
6	Boards should assure themselves that the Board agendas prioritize and carry out the forgoing rules of practice.	Action for the Board of Directors under clear leadership of the Chairman.
7	Company Internal Auditor should be hired and report to the Board Directly.	Action for the Board of Directors under clear leadership of the Chairman.
8	Boards should feel free, without the consent of management, to retain such consultants and advisors as they deem necessary to carry out their responsibilities.	Action for the Board of Directors under clear leadership of the Chairman.
9	Boards should expand their definitions of management and establish procedures for familiarizing themselves with business leaders below the level of senior management.	Action for the Board of Directors under clear leadership of the Chairman.

*Note as adapted from Millstein & MacAvoy (2003)

Ultimately the board of directors (BoD) play a critical role in setting the operating rules for an organization because they have the ultimate responsibility for appointing the CEO and signing off the organization's business strategy. Boards are becoming more and more concerned with sustainability issues such as environment, health and safety and social accountability where the risk for legal non-compliance and/or failing to meet their social obligations can have a long term lasting negative impact eroding quickly the organization's value. As the primary shareholder representatives, they are getting to better understand that the stakeholder's position is becoming stronger and they are under greater scrutiny in today's business world as opposed to even a decade ago.

However, McDonald (2010) explained the disappointing reality that the surveys conducted on UK directors on the HSE/loD 2008 Code over two years showed little improvement in awareness, leadership and implementation of Code.

In fact BoD members often lack sufficient diversity to deal effectively with the shifts from the exclusive focus on the shareholder's interests to one of meeting the expectations of a wider, more diverse group of stakeholders. As corporate sustainability has wide ranging implications on corporate governance, the diversity of knowledge and experience of the BoD has to move from the traditional appreciation of only financial and industry-related knowledge to a wider and more stakeholder informed competence [Dunphy et al, 2003]. Williams (2008), explains that even investors take greater interest today in ensuring that the organizations they invest in deal effectively with ethics, environmental and social issues positively. Socially Responsible Investments (SRI) are being demanded by some pension fund members putting pressure on fund trustees to ensure that fund managers engage in SRIs.

In the next section, the author seeks to explain how and why leadership within the context of corporate governance is so critical and then later explores its impact on safety and EHS performance in organizations.

Lastly Williams (2008), explains that even investors take greater interest today in ensuring that the organizations they invest in deal effectively with ethics, environmental and social issues positively.

2.4 Environment, Health and Safety (EHS) in Organizations

In this section, the author explores how EHS management drives the safety culture, to explain how organizations in high risk/high reliability industries have changed in the past few decades.

There has been significant growth in interest in EHS in the past 3-4 decades driven by various factors. These include the impact of legislation aimed to protect employees, contractors and the public from poor EHS practices [HSE, 2001]. For example, The Health and Safety Commission (HSC) in the UK adopted the recommendations of the Turnbull Report [see IoCA, 1999]. Comprehensive advice was provided in *"Implementing Turnbull"* [CBP-IoCA, 1999].

EHS is directly related to principles of loss prevention. Applicable in almost any business, it is perhaps more significant for the Oil and Gas and other high-risk/high-reliability industries where accidents can lead to considerable destruction to people and property, and so EHS has become a significant business concern (MacLean, 2007). It must become a core personal value at the individual's level if a safety culture is to be embedded (Al Hamoud, 2010). It is important to appreciate that whilst financial losses can be insured to a great extent, other significant impacts on reputation, customer loyalty, and stakeholder confidence (including public trust) can lead to considerable and irreparable damage. Accidents cost companies money both directly and indirectly. The indirect costs of an incident can be estimated as being up to 30 times the direct losses caused [DNV, 1996]. Insurance may not cover lost production time, loss of highly trained personnel, impacts on employee morale and productivity and time and resources spent investigating the incident. The Health and Safety Executive (HSE) in the UK estimates that for

every 1 Pound Sterling of insured loss there is an estimated uninsured loss of between 8 to 36 times of that [HSE-96, 1996].

This is exemplified in recent examples from the oil industry. The BP Texas Refinery incident in 2005 resulted in 15 fatalities, more than 170 injuries and cost BP both significant financial and reputational loss [Baker et al, 2007]. The 2010 disaster off the Gulf of Mexico in BP's offshore operations, which was one of the most serious in terms of impact on economy, the environment and people, led to the CEO's removal from his post for failing to demonstrate safety leadership [Al Hashmi, 2011]. In the past 5-10 years it is probable that no company has felt the crippling impact on its reputation (and shareholder confidence) and share-price (company value) like BP since the deep-water Horizon incident in late April 2010. The share price on 25th June 2010 (1 week after the congressional hearing with BP's CEO) had dropped from 654.6 p to 304.6 p (i.e. it lost about 46.5% of its original value). Even on the 20th of October 2011 (more than 18 months on) the share-price remained just over 460 p (<http://www.lse.co.uk>).

But, as Haefeli et al (2005, page 5) explain, "Most organizations were concerned about potential cost implications of major incidents, but were less concerned about actual costs incurred as a result of more frequent, minor events. The majority of respondents reported that they did not know how much either accidents or work related illnesses were costing their business. Few attempts had been made to quantify the cost of health and safety failures. Limited time and resources, perceived complexity and lack of expertise were the most commonly cited barriers to conducting accident/work-related ill health cost assessments."

This is an important finding given extensive research that links statistically near-miss and minor incidents with major incidents including fatalities. The US Labour Force Survey in 1990 established ratios relating minor incidents to lost-time (more than 3-days off-work) and major incidents. In the UK the RIDDOR regulation links lost-time incidents to fatalities with a ratio of 400:1. Earlier Frank Bird established a ratio of 600:1 in terms of near-misses to

major incidents. Heinrich's Domino Theory established in the 1960's explains that an incident is caused by a failing of barriers to control or eliminate unsafe conditions and acts. If these persist and thus near miss incidents occur, it is statistically significant that at some point a major incident will occur. Theory places ancestry and social environmental factors as root causes, thus including recklessness, stubbornness and greed [British Safety Council, 2005].

This would mean that although managers interviewed in the Haefeli et al (2005) study were concerned about the major accidents, they may not have realized that controlling or reducing minor incidents prevents the major incidents they were concerned about, and that they need to focus on achieving *"behavioural changes among staff at lower levels within organizations, as well as tapping into the moral obligations of senior managers and boards of directors"* [Haefeli et al (2005) page 170]. This is difficult given incorrect reporting lines of HSE practitioners and the lack of appropriately competent and trained staff [Maclean, 2011].

Many of the major investigation reports into some of the most significant recent accidents, such as The BP Texas Refinery Explosion, 2005 [see Baker et al, 2007]; the Piper Alpha Incident in the 1988 [Kumar 2007, Cullen, 1990] and the explosion/fire at Buncefield Oil Terminal in 2005 [Allars, 2007; MIIB, 2011], have emphasised the failure of management more broadly and the company leadership most particularly in preventing such incidents.

As explained earlier accidents cost companies money both directly and indirectly. Certain insurance protects employers and these include Employer's Liability, Public Liability, Workman's Compensation, Fire and Perils and so on. It is to be noted that losses cannot always be recovered for matters such as lost production time, loss of highly trained personnel, impacts on employee morale and productivity and time and resources spent investigating the incident etc.

So what is this safety culture which needs to be developed and driven from the top of the organization? Past disasters have shown the need for a real and strong commitment from the corporate and senior management [Patel, 2012]. Thus the Bahraini Petroleum Oil Company (BAPCO) developed effective Risk Assessment (RA) and Quantitative RA (QRA) programs after an in-depth review and investigation of the Texas Refinery incident of March 2005. Driven from the top, changes include using Port-a-cabins that are blast proof [Goyal and Menon, 2012]. One of Saudi Aramco's affiliates changed its focus to make leadership and accountability the most important element of the company's safety management system [Al-Kudmani, 2008]. DuPont's PSM system considers EHS a business issue - not an operational and manufacturing issue - to ensure that management commitment to uncertainty avoidance. Dupont developed a global contract management system which includes 6 elements – (1) *Contractor Selection*; (2) *Contract Preparation*; (3) *Contract Award/Establish Expectations & Standards*; (4) *Orientation & Training*; (5) *Monitoring Safety Activities*; and (6) *Evaluate Safety Performance against contractual expectations* [Van der Westhuyzen, 2012].

A just culture is the foundation of any effective safety culture as noted by Bu-Allay (2010). Error Management and Total Error Reduction Management (TERM) systems is a very effective tool for managing incidents by identifying a series of contributing factors for an incident – i.e. A collection of causes. A “just culture” allows for the reporting of incidents openly and reduces the number of accidents by limiting the incidents through effective prevention by not penalizing the reporting party or otherwise. Reporting Near-misses can help identify where the next incident will most probably occur. There is a great misunderstanding of near-misses, it is about organizational culture – Management must follow up positively and see how things are being addressed. High potential near-miss incidents (HPNMI) should be investigated in the same way as actual incidents leading to serious damage and loss [Vasudeven & Dutta, 2010].

Near-misses are ultimately a great opportunity to learn for an organization and very specific to what is happening on that site – although a blame-culture

can inhibit this [Basson, 2010]. Further, in the Middle East most PSM incidents which are caused by contractors, who have workforces comprising many different nationalities and languages. Gaining compliance of contractors in training their workforce effectively; and in monitoring and documenting etc., is therefore challenging [Snakard & Hazzan, 2010].

One major issue is that contractors with substandard safety performance may be appointed to a project based on cost considerations. In almost all organizations such large contracts require the review/approval of the Board or at least investment committees with BoD members. It is in these “due-diligence” forums that safety performance and standards must be challenged. This explains Dolphin Energy’s Management system emphasis during prequalification of contractors as elaborated by Al-Rahbi (2008) where in Contractor Questionnaires and Pre-qualifications, 2 of the key elements out of 12 are Contractor’s Management Commitment to Safety and HSE Aspects and also the allocation of Resources and organization to projects.

Senior managers must appreciate that the driving motivation for contractors is profitability. In the GCC contractors are driven mostly by price and the risks of operating within live plant can be exponential. Unless clients/employers set a higher standard, contractors will continue to be the biggest and weakest link [Drelaud, 2010]. Some are attempting to tackle this: Hemler (2010) explains that Saudi Aramco’s Contractor Safety Management System requires contractors to establish a program to establish accountability; communications requirements; performance measures; standard maintenance through compliance and monitoring activities. He emphasizes that this can only start with effective pre-qualification; Pre-job safety discussions; facility safety orientation; site safety performance monitoring. He goes on to explain that none of this can be truly implemented without top management commitment.

The relationship between safety and leadership is discussed further in this chapter. But a good safety culture requires clearly a just and fair organizational culture; strong management commitment and leadership with

strong governance systems; a clear understanding that eliminating major incidents starts with eliminating the smaller incidents and near-misses; and a strong focus on the weakest links such as contractors.

2.5 EHS Management & Leadership in Organizations

Senior management plays a significant and pivotal role in shaping organizational culture. They do this by promoting both organizational safety and proactive safety culture and achieve this through their: (1) active involvement in safety activities; (2) integrated safety management approach; (3) continuous open communication with the workforce; (4) consistent prioritization of safety and (5) consistent support for safety [Roger et al, 2010].

A cultural change to focus on EHS must be seen as a long-term strategic objective. In most organizations safety is a necessary chore rather than a business focus [Williamson, 2008]. CEOs and MDs must be able to instil safety as a core value rather than a necessary evil, and leadership is vital in this [Barling et al, 2002]]. But EHS is a competitive weapon in business, critical to customer satisfaction and company success through improvements in *(1) processes; (2) integrity; (3) rapport with regulators – allowed latitude to operate; (4) risk management excellence; (5) establishing accountability and leadership in areas and activities; (6) employee engagement levels (better safety culture development is a result); and (7) payback and operational excellence model* [Al-Mowalad, 2010].

Chevron's Operational Excellence Model sees leadership as the core thread which holds the whole system together. The model has 5 key elements anchored around leadership:



Fig 2.1: Chevron OE Leadership Model

(Adapted from [Chevron 2010 – OE Leadership Guide])

Qadir (2010) explained that the development of the **Responsible Care®** System along with the American Chemical Council (ACC) was one of the most significant developments in the Chemical industry in the past 10 years. The system is founded mainly on the fundamentals of product stewardship; from sourcing raw materials to transportation, then to production, then packaging and finally delivery to customers. Chemicals are inherently risky, necessitating such a system. The ACC and RC place a great deal of emphasis on communicating through effective product information and training all the stakeholders in the supply chain. Dolan (2012) explains that this system creates the foundation for world-class operational performance and an *“evergreen process of continual improvement”* [Dolan (2012), Page 26].

Enhancing safety through preventative maintenance management of assets and operating integrity are at the heart of operational safety and resilience [Al-Harbi (2010)]. In the process industry especially in the oil and gas sector, the consideration of inherent safety comes from lowering the risks by designing safer plant. Risk is reduced progressively as the design progresses, even at the building and pre-commissioning phases risk studies

such as what is known as Hazard and Operability Studies (HAZOP) can further reduce risk. Overcoming the inevitable residual risk requires commitment from the leadership as engineering out risk usually incurs costs. Sustained leadership is required as the plant goes into the operational phase and later starts to age, bringing about new risks [Hinson, 2013].

In The Kuwait Oil Company (KOC) after various major incidents the senior management made changes namely: (1) *Decentralize the HSE function to allow good on-site support*; (2) *Formation of asset teams*; and (3) *Involvement of the top management in the HSE tours – this went a long way in establishing accountability* [Roy, 2010].

In another case study of a GCC based Oil Company; - BAPCO uses multi-level safety committees for the Refinery; Marketing; and Oil Fields Business Steering units which all report into the Executive Committee of BAPCO. The committee selected possessed credible; committed; open-minded; learning; optimistic and responsible members [Ahmed, 2008].

To this end, the primary purpose of a Safety Committee is to develop safety accountabilities for all levels of our organization that will help eliminate injuries. The team must be led by a senior manager who must be able to cascade, volunteer and share and ultimately get people involved and empower them to show their leadership [Williamson, 2012]. A safety management system is vital [Khan, 2012].

Anderson (2008) notes that Senior Management's role begins by setting the direction for a safety strategy in 6 fundamental steps:

- (1) Demonstrating safety is a core value vs. a priority;
- (2) Establishing clear and compelling safety vision;
- (3) Communicating consistently with a strong personal belief in safety;
- (4) Creating a working environment that encourages people to provide feedback;
- (5) Measure, communicate and reward progress in achieving the company safety vision;

- (6) Display the courage to make difficult decisions needed when well performing managers violate safety.

There is a strong link between Strategic Quality Management (or Business Excellence - BE) and leadership [Al Mowalad, 2012]. Roger et al (2009) identified 6 authentic leadership characteristics that impact on safety: (1) Authenticity; (2) Self-regulation; (3) Self-awareness; (4) Ethics/Morality; (5) Transparency; and (6) Balanced processing of being just and fair in not blaming people yet holding them accountable when appropriate. Executive Leadership's role should include walk-around; tracking, attending safety committee meetings, and basically showing that they care [Sims, 2010].

Peters (2008) presented a Blue-print for safety transformation in which leadership is responsible for the:

- (1) Provision of a Safety Enabling System;
- (2) Organizational Culture; and
- (3) Organizational Sustaining Systems Leadership Qualities which includes:
Inspiring Vision; Influencing; Challenging and Engaging; Looking for Best Practices to Implement ; Credibility; Action-Oriented; Communication; Collaboration; Feedback and Recognition and Accountability.

He went on to explain the need for greater direct involvement of the safety specialist with direct leadership engagement.

Management commitment is also needed in Project Management as there are issues of costs and schedules which create huge pressures on safety and performance [Al-Jaffar, 2010].

In terms of top management commitment at Board level, Olive et al (2006) suggests that commitment comes in two ways; first of all the appreciation that investment in safety could not be treated in the conventional "rate of return" review and secondly as the "trickle-down effect" of the actual actions of the management, because employees do what they see the management do, rather than what they say. They also stress that free and open

communication was paramount in an effective safety culture, i.e. a culture where employees did not feel intimidated by negative retribution for reporting safety concerns.

2.6 Legal and Regulatory Imperatives and Organizational Leadership

As in other areas of the business, legal or regulatory compliance may drive organizational behaviour. The risk of not complying can have devastating impacts of the business as a whole. Therefore one of the key roles of the CEO and the BoD of an organization is, whilst remaining focused on commercial needs and growth, to act responsibly towards all stakeholders [IoD, 1999].

All Health and Safety Law (i.e. the Health and Safety at Work Act 1975 (HASWA-1975); UAE Labour Law 1980 and Ministerial Order 32 (1992) – UAE and the Singaporean Health and Safety Act (1997) etc. requires some degree of protection to employees' health and safety. There is thus a clear legal binding expectation of organizations to protecting employees (in fact contractors, sub-contractors and the public at large are expected to be protected) from adverse health and safety impacts. In the UK for example that legal protection to all (including employer, employee, contractors and the public etc.) is provided through the HSAWA-1975. However, regardless of there being legislation with respect to health and safety, under international common law principles such as the duty of care, reasonable care and protection of all is expected from the employer. Even in emerging or less matured areas of the world employees are protected by the ILO conventions and common law principles.

When we address the issue of organizational behaviour and the law, we start to understand the immense complexity that is created. Common law was created to govern the actions of individuals. As such when organizations act, one can presume that this is the action of an individual or otherwise collectively a group of individuals. In a long and very insightful discussion Metzger (1987) explains the major problem with the application of punishment

to corporations. He explains that under common and civil law the application of punitive damages for an organization's wrong doing creates a dilemma. In most cases for a profit-making organization these costs are either eventually passed on to the consumer or otherwise borne by the shareholders who may have not had any control over the reasons for the omission in the first place. More critically in larger and very serious incidents where the damages can lead to corporate bankruptcy, the harm is to an even wider circle of innocents such as employees, creditors etc. and even the communities that rely on that business.

Even with criminal corporate liability the problems are no less. Once again, the punishment is mostly financial and depending on the market conditions either the customer or the shareholders will end up paying. The underlying assumption is that organizations tend towards value-maximization and therefore try to spend a great deal of effort on limiting the financial impact upon them. However, the law is moving towards punishing senior managers responsible for the wrong-doing. Forlin (2011) explains that in the first case in the UK of a successful prosecution under the Corporate Manslaughter Act 2007 (CMA-2007) where a young unsupervised worker died as a result of working in a pit which collapsed where the walls were not sufficiently supported for its depth, the managing director was charged with manslaughter with a suspended jail sentence only due to his ill-health. The company was fined 385,000 GBP which was 250% of its turnover and it inevitably went into liquidation. In another case in July 2011 involving a Steel Factory in Manchester, using the CMA-2007 and the HASWA-1975 three company directors were charged with gross negligence, manslaughter and failing to provide a safe working condition for their workers.

Grey (2006) outlines two dichotomous approaches to the management of legal non-compliance especially in occupational health and safety. The first is a school of thought that self-regulation is best, using legal punishment as a last resort. The second argues for more policing, enforcement and punishment in line with typical legal management of crime. The compliance scholars argue that those violating safety are different from common

criminals because, organizational employees (at all levels) engage with socially productive activities and therefore have the capacity to be socially responsible, unlike common criminals who are less inclined towards socially responsible behaviour. The enforcement scholars argue that violations take place less due to incompetence and more to do with weighing up the impact of non-compliance against economic gains and even incompetence in the workforce. The debate continues, but in both models the onus for occupational health and safety falls on both employees and employers.

Another two recent significant developments have been; (1) “the internationalization of the law” and therefore even in the UK judges are starting to see that if international standards are grossly breached there is greater room for court action, and (2) greater professional liability is imposed on those who are advisors on risk such as EHS Managers and Consultants. Likewise failing to act on recommendations from risk assessments or health and safety advice exposes organizations and managers to serious liability if something goes wrong [Forlin & Smail, 2011]. For example, the US’s Federal Rule 404 explicitly excludes evidence of prior acts or occurrences to prove a person’s (including a company’s) character. In the case of the Deep Water Horizon oil spill, the prosecution wished to *argue that BP’s past failures and its motives for failing to take costly steps to prevent the oil spill meant that the Deep-water Horizon Spill could not be considered an accident or mistake* [Brainich & Harris, 2012, Page 2]. The court did not allow the evidence but left open the possibility that such evidence would be admissible at a later stage of the trial [Brainich & Harris, 2012].

In terms of the law, organizations must generally be able to demonstrate that they have taken the correct and reasonable steps to prevent incidents. Therefore they should conduct a risk assessment sufficient to the appropriate level required to address the risk [e.g. HSE-1996 – Defining best practices etc]. The lack of compliance even to basic safety requirements such as breach of fire escapes can bring both civil and criminal liabilities on to organizations [Forlin, 2012]. For example, a survey of 164 Fleet Operators (employers) found 91% felt eye-tests for their drivers were important only

38% actually had a policy on eye-tests in place for their drivers [Roberts, 2012]. Eye-tests are not mandatory, but in terms of liability, an organization responsible for the transport of dangerous goods would be held liable for both civil and criminal charges if a driver employed by them was involved in a major accident leading to multiple deaths and injuries if they could not prove the driver's occupational fitness. Would failing to have a policy mean that the CEO/MD and Board would then also be liable?

There are as yet few successful criminal prosecutions (in case law) of senior directors and CEOs or MDs, but developments in the law show the need for them to have greater involvement in tackling organizational EHS risks.

The question of how staff more generally can be held responsible for EHS risks is an important one. Grey 2009, explains that although employers are the primary target of regulatory enforcement, in a neo-liberal sense health and safety responsibilities are equally shared between employers and their employees, but employees are in fact more responsible as they are closer to the risk. The "*responsibilization*" for safety by motivating workers to behave more safely and giving them greater empowerment to undertake tasks safely has corporate political problems associated with it. The trade unions have not favoured this as it puts greater onus on workers, alleviating the supervisors and other employer representatives from responsibility. In an immature organization and one where the workers are not knowledgeable enough, this may impact on productivity and it has to be appreciated that for both workers and supervisors compliance to safety norms and taking full responsibility is linked to a complex set of social and institutional relationship which are created through labour-market and workplace dynamics.

Various Laws such as the Labour Law No. 8 of 1980 and various Ministerial Decisions in the United Arab Emirates (UAE) may lead to prosecution of employers who fail to provide basic Health and Safety measures including preventative measures; first aid facilities and associated equipment; safe access and egress on to sites and industrial facilities; and suitable living accommodation, etc. The Environment, Health and Safety Laws in the UAE

are more far-reaching than many other laws with regards to jurisdiction in the sense that no particular area is exempted (except perhaps the armed forces in the Ministry of Interior) and as such even Free Zones which enjoy many exemptions from various regulations must comply with EHS laws and regulations [Kelly & Chicken, 2011].

In the Emirate of Abu Dhabi (the capital of the UAE), the establishment of the EHS Centre borne from the Environment Agency in 2009, brought a Decree which launched the second version of the EHS Management System on 30th March 2012. This system, which covers all Sector Regulatory Authorities for Power and Water; Hospitality; Agriculture, etc. in Abu Dhabi, brings a common policy and manuals, and unifies terminologies. The elements help in the establishment of different regulatory instruments such as Codes of Practice, Standards and Trigger values and mechanisms. These processes, starting with transparent and effective reporting on incidents, will help with improve EHS performance [Kelly & Chicken, 2012].

The State of Qatar published its National Development Strategy in March 2011, emphasizing the need for a robust health, safety and environment (HSE) regime. In the same year the National Committee on Occupational Health and Safety (OHS) was formed which was to propose a national policy and system for OHS; devise and revise the OHS rules and regulations currently in force; and propose a mechanism for enforcing compliance. This led in May 2011 to a HSE Legal Framework document for the Oil and Gas Sector which brought together all the rules and regulations currently promulgated [Salt & Early, 2011].

The Kingdom of Bahrain, established more than 15 years ago the Supreme Health and Safety Council to develop and harmonize many of the rules, regulations and practices. Its member's representing, Industry, the Government and Non-Government Organizations. Independent members were included for their wealth of knowledge and expertise [Note 1: Meeting with MoL in Bahrain, March 2013, Manama, Bahrain].

In the Sultanate of Oman, Kingdom of Saudi Arabia and State of Kuwait, many laws, rules and regulations have been developed although implementation is complicated by many regulations falling under different jurisdictions. Given developments in Kuwait, Abu Dhabi and Dubai consolidation of EHS rules and regulations is expected in the future.

The increase in regulations brings clarity to the judicial (and penal) system when allocating blame, especially when employers failing to fulfil their duties under these codes. This will lead to more change. A good example is the *UAE Fire and Life Safety Code 2011* which is being ratified by all the GCC States who may adopt it, is very much an interesting development. To this end, EHS laws and regulations may not be driving a real and serious change in Directors and CEO/MDs as yet, but with the increasing involvement of the public prosecutor's office and judges the whole system is becoming more and more aware of the efforts that must be exerted to prevent incidents. This puts greater pressures on organizations and their leadership to establish preventative policies and strategies. Generally, one single piece of legislation does not cover all jurisdictions, but company duties and liabilities are often covered under common law, that is judge-established case law.

Recent developments such as the Corporate Manslaughter Act (2009) in the UK are further developing liability issues and putting more emphasis on direct personnel liabilities of directors and managing directors. Antrobus (2013) gives a comprehensive review of the challenges in the implementation of the Corporate Manslaughter Act (2009) and explains that in law to charge a director under section 37 of the Health and Safety at Work Act (1975) and also Corporate Manslaughter Act (2009), the prosecution must prove that:

- (1) The defendant (Director) owed a duty of care to the deceased;
- (2) The defendant breached that duty;
- (3) The breach caused the death.

In larger firm Directors are generally not directly involved in the business and proving the above is challenging. Thus most cases that have gone to trial so

far have been of smaller firms with executive directors who are more involved in the day-to-day operations. It may be extremely difficult therefore to prosecute Directors for gross negligence. Moreover, complying with regulations can be restrictive for a business, and there may be risks involved in what some regard as over-compliance. CEO/MDs themselves have expressed a wish to contribute by helping shape more risk-based or performance based regulations [Richardson, 2013]. An independent review of the state of H&S legislation in the UK suggests there is sufficient regulation in place and the challenge now is to enable businesses to reclaim ownership of the management of health and safety and see it as a vital part of the business rather than unnecessary bureaucracy [Lofstedt, 2011].

2.7 Conclusions

This chapter addressed in some length the historical developments of corporate governance. Changing socio-economic factors in the Arab World, Middle East and the GCC are significant and, compounded with globalisation, have brought about many changes in organisational development and workings.

The demand for energy is increasing, there is a growing population and many of the large high risk/high reliability organisations are government owned entities. The importance generally of corporate governance globally has increased in the past 15-20 years and in more recent years corporate governance standards have recommended going beyond financial reporting to reporting the non-financial performance of organisations. With a fast changing world and greater complexities the function and effectiveness of the board of directors as a body has come under greater scrutiny.

Organizational leaders' role in defining and continually improving the safety and EHS culture is vital. Just, fair and transparent organisational cultures plays a very big role in ensuring better EHS cultures, and EHS in general should be led from the top.

The development of EHS management systems, operational excellence systems and overall the integration between organisational EHS management systems emphasises the importance of the management system as an effective tool to maintain and improve EHS performance. Legal and regulatory imperatives are increasing. One of the key roles of internal policies/standards of practice in an organization is that they help ensure compliance with statutory regulations. Whilst it may be debatable to what extent MDs/CEOs and Board Members are responsible for omissions of shop-floor employees, executive and board management must ensure appropriate policies, processes and procedures are in place to reduce risk and ensure compliance to both regulations and good practices from the industry. The following chapter explores the board's leadership role and the relationship between the chairman and the CEO/MD.

The impact of leadership on the performance of organizations and their sustainable growth is critical. Sustainability has become a central theme in organizations. Asbury and Ball (2009) give an excellent overview of the development of this aspect of sustainability focusing on the rise of corporate social responsibility (CSR), which is discussed further in the next chapter, as an important component of organizational dynamics.

Many negative impacts which are related to EHS they quote are habitat destruction, use of resources, waste generation, noise, local safety issues and other pollution issues. They explain how stakeholder expectations have started to set a tone for overt organizational behaviour and where other stakeholders other than shareholders have begun to have a greater impact. They identify 5 main types of stakeholder including (1) Customers; (2) Employees; (3) Suppliers and Contractors; (4) Shareholders and (5) Society at large. Of course within society non-government organizations (NGOs) have in more recent years played a very important role especially after certain environmental and safety incidents where significant damage like environmental pollution and or fatalities/injuries has occurred.

In the next chapter, contemporary issues with EHS leadership are discussed.

Chapter 3: Contemporary Issues for EHS Leadership in Organisations

3.1 Introduction

The historical issues relating to the development of corporate governance, EHS leadership and EHS cultures and organisations were discussed in the last chapter along with the legal and regulatory imperatives for EHS. This chapter discusses the more contemporary issues that relate to EHS leadership and governance in organisations.

This includes the relationship of Corporate Social Responsibility (CSR) Social Accountability (SA) and sustainability with EHS. It addresses the effectiveness of the board of directors and their relationship with the CEO/MD in the context of EHS governance. Sections on organizational structure and effective safety communication in organisations and then a review of the risk perception, risk management and risk tolerance discussions and debates with enterprise risk management follow.

The chapter concludes with a discussion which brings together the concepts and research discussed in both chapters 2 and 3, i.e. the body of literature review. The conclusions are very important and it provides the 9 key themes which define the initial framework themes of the concepts that this research is built upon.

3.2 Relationship of Corporate Social Responsibility (CSR) Social Accountability (SA), Sustainability

Corporate Social Responsibility (CSR), Social Accountability (SA) and Sustainability, all have a bearing on the integration of management systems, the positioning of organizations in the market and are interlinked in certain elements to EHS [Bibbings, 2008]. With CSR, the community work that organizations do to improve the safety and security of people's lives within regions in which they operate is important. O'Connor & Young (2008),

explain that HSE are key business concerns which impact on costs and give a competitive edge – Risk Management as they see it sits on a foundation of commitment from the organisation's corporate leaders.

With social accountability standards, safety and security elements are fundamental in the very basic standards of the International Labour Organisation (ILO). Sustainability reporting relates to environmental protection and the safety of the greater environment and that of employees and public alike.

In implementation of CSR and EHS systems getting employees engaged is very important. Employee engagement such as lower absenteeism (injury/illness rates are lower) explaining also that more than 50% of injuries that employees have are off work, thus engaging them and even their families in safety has immense benefits to the organization as well as society at large Al Hajri (2012).

Voluntary reporting has increased in present years as organizations want to present themselves as good corporate citizens and charity must start at home – when protecting their own employees. There is significant literature in these areas which addresses the involvement of leadership and company boards in driving these initiatives, endorsing the reporting and enhancing transparency within their organizations, the industry and the general public. This is also becoming very important in the rapidly transforming context borne by the new socio-economic realities in the Middle East.

The Safety and Health Sustainability Taskforce set up by the American Society of Safety Engineers (ASSE) had developed a Safety and Health Sustainability Index (SHSI). This index was built on six key elements: **Values:** (1) Safety and Health Responsibility Commitment; (2) Codes of Business Conduct; Operational Excellence; (3) Integrated and Effective Safety and Health Management System; (4) Professional Safety and Health Competencies; and under **Oversight and Transparency:** (5) Senior

Leadership Oversight and Safety and Health and, (6) Transparent Reporting of Key Safety and Health Performance Indicators [ASSE, 2010].

The inception of the ISO 9001 Quality Management System Standard in the early 1990's (which started as the British Standard BS 5750) followed by the ISO 14001 Environmental Management System (EMS) and OHSAS 18001 Health & Safety Management System Standards have all brought about change in organizational behaviour towards self-driven compliance. These certifications, it may be argued, have given organizations an effective brand-value proposition and marketing edge against their competitors – with their stakeholders more inclusively rather than just their shareholders. This perhaps reflects the appetite to invest and comply with a standard when an organisation feels it adds value from an external perspective.

The “*Rewarding Virtue*” document recommended 6 areas in order to reinforce the UK's Combined Code. These included (1) setting of clear values and standards by the leadership; (2) Thinking strategically about corporate responsibility; (3) Being constructive about regulation by being self-regulating and supporting the authorities; (4) Aligning performance management systems to encourage rewarding a more longer term out-look/behaviours rather than shorter term and narrow financial targets; (5) Creation of a culture of fairness and integrity in which the tone is set right at the top; and finally (6) Using internal controls to secure responsibility and thus through effective governance systems [HSE, 2006].

Kotler & Lee (2005) explain the shift that has taken place in the past 50-60 years from an obligation to a strategy. The links between the profit making organizations and the more philanthropic ones has matured and emerged to become more symbiotic supporting the greater development of resources such as marketing, technical and employee volunteerism. This meant more personal involvement of the organization's staff with support from their employers rather than just paying into NGO's cash contributions.

Good companies continue to fail to do what is perceived to be the right thing. They fail to be able to clearly prevent things happening and things or situations deteriorating and Schwatz and Gibb (1999) conclude their book *“When good companies do bad things”* with the following reasons why companies fail:

- (a) They fail to create a culture that tolerates dissent or one in which the planning processes are encouraged to take nonfinancial risks seriously;
- (b) They focus primarily on financial performance;
- (c) They discourage their employees to thinking about their work as whole people, from using their moral and social intelligence as well as their business intelligence;
- (d) They focus on people and organizations that think and behave the same way and avoid those who do not agree with them or criticize them.
- (e) They let their commitments to certain projects and products overwhelm all other considerations and decisions; be they financial, ethical or social etc.
- (f) The senior management consider social issues as those for others to have to worry about as this is not really part of their necessary operability and existence.

The notion that such companies do not really have a long term view or vision in a social context and they expose themselves to more bad incidents occurring is evident. Firstly because their risk assessments are flawed, and secondly when there is a failure they have very little to show for doing anything to have effectively prevented it. As they must invest in emergency and crisis management they become classified as highly unreliable organizations.

In discussion with a Senior Legal specialist (see Note 2 in references) of a firm in the GCC, the concept of the “doing good to look good” is at odds with the more prevalent culture in the GCC and Middle East. More rooted in a

tradition dated back to the Prophet Muhammad's (PBUH) conduct; metaphorically describing the fact that the right hand should not know (what charity) the left hand has given. This means that it is quite a foreign concept in the Arab/Muslim world to over-advertise the kind of CSR /charitable work. The concept is of course that the reward is in the hereafter.

In terms of environmental protection, social responsibility and EHS at work, these aspects have become of significant importance to corporations. Many organizations within the Oil and Gas sector, for example, will be very clear and vocal in their commitment to these issues. MacLagan (1998) explains that trust in organizations by all its stakeholders including the employees, customers and the public is essential for its longevity and sustainable existence and growth. This has led to the development of audit committees, codes of ethics and CSR-type policies etc. The value of corporate governance goes beyond control, in that it creates an environment of enterprise and best professional practice to extract the long term-value from a commercial enterprise [Bain & Band (1996)].

In 1997 a standard was issued (later updated in 2001) as a guide to companies in addressing worker rights. This was the Social Accountability Standard SA 8000 which was developed by Social Accountability International based in NY, USA [see SAI, 2012]. However, whilst the standard is novel as it is easily addressable within organizations it really distilled the main norms of the ILO's conventions relating to the Universal Declaration of Human Rights and the UN Convention of the Rights of a Child. The standard looks at issues from child labour, to forced labour, freedom of association and right to collective bargaining as well as EHS and working hours. It remains a voluntary standard but has driven many large organizations which operate and engage with businesses in third world countries to get them prequalified and continually compliant with certain basic SA standards. This prevents organizations being blamed for exploitation and/or even subsequently boycotted. Epstein, 2008 explains that whilst the Global Compact has helped in shaping human rights expectations of employers it has had its fair share of criticism due to the failing or lack on

monitoring, accountability and enforcement. Perhaps one of the resources was that much of this drive has been overwhelming for organizations who wanted to comply as they understood the importance, but in all fairness perhaps did not expend enough effort in initiating/inducting (also sometimes called “on-boarding”) effectively all the leadership teams within these organizations, starting with the Board of Directors.

When organizations address the issue of sustainability, it is critical to understand three key reasons; (1) Greater Environmental Awareness in the Public; (2) Greater Expectation from the Shareholder for the Board and Management of an organization to ensure long-term (sustained) value proposition and; (3) the significantly increased “customer power” in that the customer has a greater choice to go to the extent of boycotting a product or service.

Bell and Morse (2008) explain that “Greening the Strategy” is essential for many organizations today. This means things including risk reduction, reducing environmental stresses and in turn the human vulnerability to environmental stress and in fact if not mitigated and controlled at source, risks in general impact greater on the societal and institutional capacity to respond to EHS challenges notwithstanding the ethical need for global stewardship. As such the creation of a quantitative value in the form of an Environmental Sustainability Index (ESI) was created several years ago. The index is perhaps more subjective although represents itself as an objective figure – its value lies in the awareness it brings about (especially to executives who frequently work with numbers), brings about some specific rationalization of a globally complex issue to digest, and at the very least can help if used effectively to get leadership in organizations to make better informed/aware objective judgments.

These sentiments are also shared with Hart (2007) who talks of the new “sustainable global economy”. He proposes that organizational leadership may consider three stages of implementing a green strategy starting with pollution prevention; followed by product stewardship and looking at product

lifecycle impact; and then the investment in cleaner/environmentally sustainable technologies. This commands a longer term view-point on risks and opportunities, especially for organisations involved in manufacturing and production.

The above is consistent with the growing notion of the shift from “traditional industrialism” to “natural capitalism” as described by Lovins et al (1999). A real financial value in optimization of resources with available technology improvements and the rising price of both raw materials and waste management/disposal means that Environmental Stewardship goes beyond doing the right thing – it makes business sense.

In a thought provoking publication by Luikenaar and Spinley (2007), CSR, EHS, Sustainability and SA issues have led to the emergence of a new profession “*the Chief Sustainability Officer*”. Significantly high level issues that organizations have to address and the pressures for change are driven by EHS, sustainability and the regulations which put greater vicarious liability on the organization. On the other hand there are good incentives to changes which include: enhanced brand image/reputation; decreased costs associated to insurance, losses and fines; a greater protection of assets; and increased efficiency in both plant and people.

In conclusion, it would seem that matters that relate to the organisation behaving like a good citizen, showing that it is socially accountable and corporate social responsibility in general have a positive impact on EHS which is part of protecting people and the environment. This is true in developed and also developing economies. With greater globalisation of business in general around the world, it seems that the standards or better still the expectations for corporate social responsibility are also becoming very similar.

3.3 The Effective Board and its relationship with the CEO/MD of an organisation

To understand more how effectiveness of EHS leadership is defined, the need to understand where EHS actually resides in policy, principles and mandates becomes critical. It is equally important to understand not only how the shareholders (and stakeholders) define these standards, but how they ensure that such individuals are prepared to take on such responsibilities. What are the competencies required for this? What is the knowledge they should have? This is especially important in the context of high risk/high reliability organizations.

Whilst we see development of standards for Boards; perhaps what may have been a more ceremonial, prestigious and less functional role of the BoD in the not so distant past is fast changing. These changes included the structuring of the Board, the processes and behaviour; managing the board; the board role; and understanding the board's role in corporate strategy and finally the corporate board and the law [HBR, 1981].

Nicholson and Kiel (2004), explain that the concept of “independence” of the Board Director and its inevitable value to the corporation may be contested. They explain that the less independent but more experienced, knowledgeable and connected directors would be of greater value to the CEO/MD and the organization. Drawing on two studies [Pfeffer & Salancik (1978) and Hung (1998)] they explain that the roles have changed over the last 20 years from being directors serving as a co-optive mechanism to access vital resources; as boundary spanners; and enhancing organizational legitimacy towards more linking the organization to the external environment; coordinating the interests of stakeholders; controlling the behaviour of management to ensure the organization achieves its objectives; strategy formulation; and so on.

Millstein & MacAvoy (2003) propose strongly that the first step of reform in Corporate Governance was to separate the role of the CEO and Board

Chairman (where the Board Chairman is an independent Director). This is with respect especially to listed companies. They explain that independence is critical to the Board's objectivity especially in three key areas:

- (a) To identify the issues it should focus on and the strategic issues of importance;
- (b) To obtain information that it needs to assess management performance – with respect to the chosen strategy which includes adherence to codes of conduct;
- (c) To ensure that the management's efforts, as they put it, "obfuscate" important issues or information needed and thereby hindering the Board's ability to fulfil its responsibilities, be effective as it should.

Furthermore, in their *"Intellectual Capital Model of the Board"* model developed they define the 4 key Board Roles to include (1) Monitor and Control; (2) Access to Resources; (3) Strategizing and (4) Advice and Counsel [Nicholson and Kiel, 2004].

This is consistent with Al Hashmi (2014)² whose pilot study work determined that most managers saw the top 4 roles of the BOD to be (1) Vision, Mission and Strategy Setting; (2) Governance and Oversight (Financial & Non-Financial); (3) Monitoring Company Performance - Internal Controls; (4) Business Continuity Planning and Monitoring. The differences seem to be more supportive role in the Western context as opposed to a more governance and oversight role in the more Middle Eastern context. This is an issue which is developed and explored further in this thesis research.

Heidrick & Struggles (2010) see a central and pivotal role of the Chairman. The Chairman's role has changed to become one subject to greater scrutiny from stakeholders. Shifting from a prestigious, yet gentle way to complete a successful business career to a more involved, engaged, empowering and highly critical leadership role. Chairmen need to provide strategic counsel to the CEO and encourage Board Members to engage in productive critical discussions. They need to develop that dynamic partnership between the

CEO (and management team) and the BoD. They need to develop a strong talent bench ensuring that the senior executive team are working effectively with the CEO and enabling them and in time also mentoring them or ensuring that the right environment exists to develop the executives (and non-executives) of the future. They need to exercise authority with empathy recognizing the governance is as much about people as it is about process.

Finally one very important skill of the Chairman is to command respect to ensure that an effective balance of collective Board strength and prevailing executive culture. Naturally executives will concentrate on areas of opportunities to improve performance in their own areas and careers, the Chairman needs to ensure that the Board maintains an effective long-term analysis view on such actions and not get too close to the operational details that they obscure their objectivity.

If some view the CEO as the “*Chief Risk Officer*” then the Chairman can be considered the “*Chief Risk Governor*” for the organizations. More recent thinking as suggested by Favro (2011) is for CEOs to work with a Board regardless of structure as a strategic partner. Bauer & Schmidt (2008) explain that when reviewing literature on the strategic role of Boards, at times inconsistent resource allocation creates the role conflicts between Board Members and Executive Leadership and this can have a significant impact of an impaired view/judgment on strategy implementation. This is because there is no validation of action against strategy and this can lead to a greater issue of a longer term value-proposition of the organization. This is particularly significant when resources in terms of manpower and finances are required for improvements that relate to EHS which can be in many cases business continuity/risk management related and require the commitment of the leadership teams both at the Board and Executive levels.

Kakabadse & Kakabadse (2007) identify 9 different demographic factors that affect role pursuit. They include the distinctly personal and idiosyncratic approach towards chairmanship. Interestingly here Chairmen focus on Board dynamics and affairs and leave the enterprise matters to the CEO. Another

factor is accountability spread in which the differences between UK and US/Australian companies are mainly accountable for Board performance vis-à-vis accountability for Board and company performance. They admitted that all persons interviewed explained that the role of the lead independent director (LID) or senior independent director (SID) was relatively too new to the Board concepts in the USA and UK respectively. Many agreed that their existence did help balance Board dynamics especially those relating to the tension on certain issues between the Board and the Executive Team due to their independence. This is important in the context of critical risk management issue-related decisions which can become quite subjective and require a well facilitated debate.

The study concluded that the CEO/Chairman relationship remained the single most important determining factor that ultimately impacted on the performance of the Board and Company.

In terms of Board effectiveness there are four types/levels suggested by Gwin & Vavrek (2011) – the “*Basic Board*” which satisfies the minimum requirements for governance and compliance. They ensure the implementation of key Board processes. The second type is the “*Developed Board*” which goes beyond governance and compliance and develops the more forward looking philosophy which develops the member’s competencies and capabilities and ensures alignment with company strategic objectives. The third type is the “*Advanced Board*” which additionally looks at High Performance and has members with not only a forward thinking outlook, but those who have a better global mind-set and operate within the global networks. These boards have generally higher levels of emotional intelligence, greater organizational strategic engagement and ERM.

There is a significant step change from the second to third type as the behavioural leadership development and diversity of exposure of individuals is required. In the fourth type, a “*World Class Board*” encapsulates the traits of governance, compliance, forward looking and high performance only that they also have a Board with a breadth of insights, depth of knowledge,

diversity of ideas, and strength of processes and ultimately they create greater sustainable shareholder value. This Board is very rare and both at an individual and collective level are able to add great synergetic value to the CEO, the Executive Team and the whole organization – especially with their insightfulness and continual improvement.

Ultimately *“A Board should possess enough collective knowledge and experience to promote a Board perspective, open dialogue, and useful insights regarding risk”* Delloitte (2011) Page 4 explains.

Heidrick & Struggles (2009) suggest that the average number of members in a typical British Board is 8; in France is 14; in Germany it is 19 and the average membership in the GCC has shifted from an average of 8 in 2009 to 9 in 2011. In the GCC the shift from 2009-2011 has gone from 46% to about 65% respectively. In an extensive benchmarking board study undertaken on the Oil and Gas Sector by PWC (2010), they noted that between International Oil Companies (IOC) and National Oil Companies (NOC) the Boards varied in size ranging from 9 to 15 and the range of finance specialists on Boards ranged from 15 to 40% whereas industry experts ranged from 10 to 50% with the higher number of industry experts in the NOCs which is interesting. IOCs had in general a greater number of independent directors appointed as opposed to Institutional or Government appointed Directors.

An important balance is required as whilst the independent (i.e. non-executive director and one who has not been appointed by a partner in a joint venture or private joint stock company) brings in a “less-biased” view, a level of harmony is required between Board directors who should all bring different perspectives based on their experience, specialist knowledge and market views are they global or local.

It is highly recommended however, that at least two members of the Board are executives and this is generally the CEO and the CFO. This ensures a greater connection between the business operations and the strategy development and is referred to as the *“Mixed Board”* [Heidrick & Struggles,

2011]. It would follow that high risk/high reliability organizations should consider having Boards with a sound understanding of operational risk management.

Boards have a very complex role of being simultaneously entrepreneurial and exercising prudent control; sufficiently knowledgeable about the business whilst standing back from the day-to-day workings in order to retain an objective and long term view; sensitive to the short-term pressures whilst being informed on the longer-term implications; knowledgeable of the local issues whilst maintain clear understanding of the more international aspects; and focusing on the financial performance whilst acting responsibly towards all stakeholders [IoD, 1999].

As such a certain degree of care and diligence is expected from all directors who must carry out their functions with reasonable skill, care, diligence and they may be liable if they are negligent and higher standard of performance is required of a director who may possess particular skills or professional qualifications.

It is good practice for boards to have clearly stated in the Memorandum and/or Articles of Association (MoA) and/or (AoA) the powers of the board directors and the chairman. This is important as this is where executive and non-executive roles may overlap. The CEO should be allowed to demonstrate their leadership and management whilst the board should be able to “interfere” should they feel this is part of the prudent corporate control. Whilst many examples may be cited especially when it comes to financial decisions, our focus in this thesis is more on the operational and non-financial performance of organizations.

In defining the “new energy executive”, Csorba (2010) explains that executives especially in the high risk energy industry (oil and gas etc.) must:

- (1) Be effective Risk Managers;

- (2) Develop integrated decision making skills with a balanced approach to operational, financial and EHS decisions;
- (3) Be Accountable and self-effacing like any leader who must accept responsibility – to see leadership as a responsibility rather than a privilege. Leaders at both CEO/MD and Board Level must accept accountability for things when they go wrong;
- (4) They must be authentic communicators, and this includes being honest, transparent and clear in their communication.
- (5) Be involved and committed to continuous people improvement and continuous development and improvement comes with a culture developed within an organization driven by the people at all levels.
- (6) Poses high levels of Emotional Intelligence and this is important in dealing with people with sensitivity and empathy.

Interestingly, Walaski (2012) explains that communication during and after a crisis is an important skill of spokespersons, HSE professionals and very senior managers and explains by using the Deep-water Horizon case study. The ability of leadership to stand before tribunals after an incident emphasizes the point that leadership must be ready to answer questions otherwise they will fail, and this will have implications not only on them or their organizations, but surely as was seen with the BP incident an impact on the whole industry. In a personnel discussion with a senior director of a major upstream (see Note 3 references) operation based out of India, the delay in the commissioning of deep-water upstream exploration was more than 16 months when the Sri Lankan Government withdrew their approval to operate until, this organization was able to re-assess independently and re-submit updated risk assessment studies in the wake of the Deep-water Horizon incident and the losses this caused were in many Millions of Dollars.

Integrating the governance, risk, and compliance functions to align with business objectives and drive efficiencies is a critical success factor of modern organizational leadership [PWC, 2005]. More is discussed under the section on Risk Management, but it is critical to note that whilst the process of integration may seem straight forward and simple, getting the functional

heads and all these departments to work with each other must be something that is driven from the Board. The reasons for this are some of these committees work directly with the Board and whilst the functions report operationally to the executive management, they functionally report to the Board.

3.4 Organizational Structure and Effective Safety Communication

In this section, the author explores organizational structures and how they can have a direct bearing on how safety is managed and led within an organization. Communication is a crucial aspect of informing, reporting, monitoring and eventually engaging leadership in supporting initiatives and change as and when needed to control risks which can arise.

Safety must be managed throughout the organization and led from the top where strategic risk reviews must be undertaken of all the operations involving the leadership team and preferably involving the Board Directors [MacLean and Row, 2001]. Defining the key EHS responsibilities and accountabilities within the corporation is critical. The role of the EHS managers/advisors must be defined. They are responsible in the context of high risk/high reliability organizations to help manage risks in such a way that they bring sustainability to the business.

The impact of major incidents due to lack of any safety controls of for example intoxicated workers on the site of plants in the late 1800's and early 1900's, drove DuPont for example to develop better safety regulations. Enhanced safety provision has arisen from improvements in the past 50 years to both physical (technology related) and procedural methods. This was further enhanced throughout the industry through effective sharing of incident investigation findings within the industry [Freibott, 2012].

However, many of the employees surviving the blow-out incident in the Deepwater Horizon incident with BP indicated that management routinely dismissed warnings and documented procedures to hasten making the well

productive. So it was an unsafe company culture which developed [Sullivan, 2010].

Katoty (2012), explains that the EHS Data is very important to collect and analyse in organizations, and that organizations must use this information to make improvements. These collect both passive and active, leading and lagging key performance indicator (KPI) related activities and data. Industry must be able to effectively measure, monitor and control. That is why KPI reporting is one of the best EHS communication methods and helps senior leadership make decisions [Travers, 2012]. EHS KPI summarized data reports with trends go to the BoD of all major high risk/high reliability organizations.

Good EHS performance is attributed to this a particular practice or initiative from the management team [Freibott (2010)]. To balance between leading and lagging indicators is important; building the KPI system on the basis of the Global Reporting Initiative (GRI) or the Balanced Score Card (BSC) integrated management systems and making it part of the business management systems and intelligence rather than a standalone system [O'Connor et al (2), 2010].

In the Eastern Petrochemical Company (located in Saudi Arabia), EHS performance is a key performance measure of the organizational performance. Senior Managers are held accountable for safety performance as any incident is caused by a lack of effective risk management and control. [Al Fardan, 2008].

Moore (2008) notes that using the Centre for Chemical Process Safety (CCPS) definitions explains the differences between the *Lagging* - retrospective metrics – based on incidents that meet a threshold of severity that should be reported; and *Leading* - A forward looking set of metrics which indicates performance of the key work processes, operating discipline, and layers of protection that prevent incidents. In the Baker Panel recommendations an improvement in the PSM in all industries with

benchmarking was a fundamental improvement requirement [Baker et al, 2007].

Reporting EHS performance can be a contentious issue for managers. Whitaker (2007) explains the importance of the reporting lines and structures within organizations when it comes to EHS managers. EHS managers must also try to acquire the right business acumen in order to better present data and information in such a way that management be it operational or executive better relate EHS to the business itself. He tackles the issue of reporting of EHS within an organization and discusses the advantages and disadvantages of centralization, decentralization, and hybridization as well as matrix organizations. His emphasis is on that models work best depending on the organizational structure, size and locations of operating sites. The importance of EHS reporting to the highest authority within an organization to ensure the right information is sent up in a timely manner is reconfirmed.

McLean (2003) stresses that practitioner's must report to the organizational leaders. This is not only so that he may help in directly implementing their said commitments but also as this reporting line in itself demonstrates to everyone with the organization that this position is a senior one, carrying equal importance to all the other operational, technical and financial functions.

Risk management governance frameworks for national O&G industry should be a management process whilst HSE is a business support function requiring the involvement of committees to help direct efforts effectively within an organization [Booz & Co, 2010].

Finally on the matter of effectively communicating the safety message Bibbings (2003), explains that the EHS practitioner has a key role is this and that practitioners must be able to do this with visual and organizationally felt support. Therefore leaders in organisations must be seen and heard supporting EHS. Moreover, the BoD must monitor the performance of an organization in every way. This includes EHS performance as the impact on

sustainability of the business, reputation, assets and most importantly people can be very high.

3.5 Risk Perception, Risk Management and Risk Tolerance

In this section probably one of the most significant areas to be explored, is risk management. The literature has a significant abundance of studies and articles that talk about risk and the role of risk management in organizations. The definition of risk and risk control is important to establish. Equally as important is the very understanding and appreciation of how risk perception at the senior management and leadership levels can impact on the type, quality and speed of decision-making in high risk/high reliability organizations. The concept of loss prevention, loss control in the context of the wider Enterprise Risk Management (ERM) will be explored.

The management of risk concerns itself with the prevention of loss, preventing being negatively impacted by issuance of enforcement, improvement or prohibition notices from the 'local authority having jurisdiction' for health and safety. It also helps avoid punitive action in which both civil and criminal courts may impose fines and compensation claims, and imprisonment for breaches of legal duties respectively and which can affect companies or individuals and thus their operations and reputation [Lukic et al, 2010]. Riaz-ul-Hassan (2012) makes reference to the Deep-water case study and says: *"Better management of decision-making processes within BP and other companies, better communication within and between BP and its contractors and effective training of key engineering and rig personnel would have prevented the Macondo incident"*. [Riaz-ul-Hassan, 2012, Page 83].

A cost value analysis of safety incidents must be studied by the senior management. This was based on a study that was undertaken under Board guidance for a high risk chemical company which used quantitative loss evaluation methods to manage risks [Bardy et al, 2008].

Mandel (2012) talks of the stages of the development of management of risk in organizations, and argues that over time the value of risk management has been mainly driven by the changing business needs perspective from financial to operational to management to strategic. He offers an explanation which has been summarized in the table below.

Table 3.1: Corporate Enterprise Risk Management

Perspective	Corporate Value	Focus	Scope	Type of Risk Management
Financial	Low	Hazard and Casualty Risks	Risk Transfer, Insurance, Loss Prevention or Mitigation of Insured Risks	Defensive
Operational Management	Medium	Individual Business Risks	Mitigation of controllable risks and management of risk as an expense	Advanced
Strategic Management	High	Strategic and Operational Risks	Support Business Objectives, Consistent, Systematic Risk Management Practices and Risk as a Differentiator	Enterprise

Risk Management is one of the primary responsibilities of Directors and as such they are required to provide leadership within the framework of prudent and effective controls which enable risk to be assessed and managed. The Combined Code states: *“Are the significant internal and external operational, financial, compliance and other risks identified and assessed on an on-going basis? (Significant risks may, for example, include those related to market, credit, liquidity, technological, legal, health, safety and environmental, reputation, and business probity issues”* [HSE, 2006, Page 10]. By leading through setting the strategic direction; setting values and standards of business conduct and objectives; holding management accountable for actions; upholding obligations to all stakeholders and by overseeing the internal controls and assessing their effectiveness.

To define risk firstly in some context Mandel (2012) defines strategic risk as *“those internal or external uncertainties, whether event to trend driven, which impact an organization’s strategies and or the implementation of its strategies”* [Mandel, 2012, Page 11]. An example of dealing with external risks would be if security risk to installations is considered, in general high risk operations are well-security managed to ensure they control any kinds of imported risks. Gregory (2011) discusses the issue of the changing face of security in becoming more integrated as part of the installation enterprise safety management system. He argues that this is also being demanded by many insurers of risk who end up carrying the burden of *organizationally transferred* risk.

Cavanagh et al (2008), showed through using a multi-variable frequency analysis of different HSE incidents and prove cost control can be achieved by better HSE risk management, thus good safety equals good business.

In reference to one of the widely used Risk Management (RM) standards across the industry today, Newbery (2012) explains that is a structured process to manage risks arising from operations include environment, health, safety, quality and security, financial as well as reputational. He goes on to explain that the ISO 31000 International RM Guidelines and tries to address the question *“Is the level of risk acceptable, and does it require further considerations and actions?”* This raises issues relating to uncertainty and risk appetite. He also explains that RM must be integrated within the organizational management systems and built on continual improvement and dynamic reviews. Clarke (2010) on the other hand explained in detail the concept of *“As low and reasonably practicable – or ALARP”* as the way that many organizations today deal with rationalizing their risk appetite decisions.

Dufort (2013)¹ makes a compelling case for risk governance at the board level and explains that Directors have to be concerned about risk which include the fiduciary duties; contribution to an organization’s strategy; constructively challenging management’s proposals; due diligence and risk awareness; and so on. He goes on to explain that there are five key oversight

responsibilities which are common to many of the leading corporate governance codes. These are summarized in the 3.2 below:

Table 3.2: Summary of Directors Risk Oversight Responsibilities

No	Theme	Action
1	Strategy	Approve strategic planning processes and the organizations strategic plan which includes sustainability of operations, opportunities and risks.
2	Risk Management	Review and approve the main risks associated with the organization's activities.
3	Compliance	Ensure that processes and systems exist and are being implemented to manage those risks – including systems of internal control.
4	Processes	Define at a high level and approve processes in which the BoD or one of its committees evaluates the company's main risks (periodically).
5	Structures	Review and approve organization's structures and processes to manage both existing and emerging risks.

Trends show that Boards are moving toward the following best practices when it comes to risk management [Dufort, 2013²]:

Table 3.3: Risk Management – Emerging Best Practices

No.	Best Practice	Action Description
1	Risk Appetite	Develop a risk appetite statement (developed by the executive management and approved by the board) and expresses the attitude of the organization towards risk-taking and at times setting lower and upper limits.
2	Risk Culture	As studies have shown that catastrophic losses have arisen from a lack of risk management, a culture which pays little attention, tolerates or worst encourages risk taking behaviour. A culture of risk management needs to be set and this has to be set by both the Executive and BoD and this needs to percolate throughout the organization.
3	Risk Committee	Many best practice codes has required that Boards set up Audit (and Risk) Committees. Risk committees looking more holistically at internal and external risks and involving a wider base of professionals is where newer risk management guidelines are moving.

No.	Best Practice	Action Description
4	Chief Risk Officer	In especially large and more complex organizations, the role of a chief risk officer with a direct reporting to the CEO and access to the Board is where larger, more progressive and higher reliability organizations have been moving.
5	Internal Audit Function	A separation of the Risk and Audit has become more accepted. Even between these two functions due to the invertible internal/external focus which develops a possible conflict of interest may arise and thus these functions in more complex and progressive organizations have been physically separated.

O’Conner (2010) defines ERM as: *“A Process, affected by an entity’s Board of Directors, Management and other personnel, applied in strategy setting across the enterprise, designed to identify potential events that may affect the entity, and manage risks to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives”* [O’Conner (2010), Page 46].

In another definition by Delliotte (2008), Page 12: *“ERM is an enabler of risk intelligence, and its true value may lie in its ability to enable a systematic identification of possible causes of failure – failure to protect existing assets and failure to achieve future growth, i.e. manage both rewarded and unrewarded risk. Unrewarded risks are typically associated with lack of integrity in financial reporting, non-compliance with laws and regulations, and operational failures – i.e. there is no premium to be obtained for taking these types of risks. Rewarded risks are those that typically have to do with strategy and its execution”*. Whilst this may be true, it must also be equally appreciated that it is not always easy to differentiate between them as they are at times interconnected. To give an example, an overall strategy to reduce cost of maintenance, may lead to a rapid deterioration of integrity and thus lead to a serious incident that cripples an operation.

Yousif (2010) explains that between 2008 and 2010 economies were in the midst of a global financial crisis, organizations started looking more closely at

enterprise risk management. In fact quoting a study undertaken by Deloitte, he explains that the top three risks facing the energy sector (i.e. power and utility; system operators and oil and gas) in the Middle East included *Regulatory Risks; Asset Performance (Integrity); Operating Integrity; Business Continuity and People/Talent*. Whilst these are not EHS risk directly they can have both a direct and indirect impact on EHS.

The Jaipur October 2009 fire incident in India killed 11 people, injured another 45 and destroyed the Oil Storage Terminal and damaged properties up to 2 km away. The incident was a result of a routine operation. Six major recommendations to the management committee of the Indian Oil Corporation were made which included in-depth Board level reviews on a quarterly basis focusing on safety in the different sections within the organizations with a primary focus on risks and mitigation measures. It also recommended that the executive management at the Group's level undertake at least 2 inspections of every major installation within their areas of responsibilities per annum to look at risk control measures and emergency response preparedness and report this back to the CEO. Major safety reviews and audit findings must be personally reviewed by the CEO [IOC, 2010].

Cavanagh et al (2) (2008) recommended that higher management's outlook to managing plant life-cycle risk must integrate with both the EHS risk profile the organisation's investment portfolio and must address the supply chain impacts. Running scenarios and looking at the risk more holistically as a model rather than just the plant risk.

Risk can be extremely subjective and must be considered in a wider context of environment, people, organization and cost-benefit analysis [Iskandar, 2010]. Al Nakib & Jackson (2008) explain that in a case study in upstream O&G operations the HSE Philosophy was built on various drivers of which the first is to identify the high risk areas. The main driver for the executive management team was to bring about a consistent review process focusing on the high risk areas in a performance-based approach.

McKinnon (2012) explains that in the domino theory, the causality between underlying factors and the sequence of events is governed by good management system practices to control loss. However, Bibbings (2001) maintains that the future of Boards will mean expectation for greater competency to give stakeholders “Control Assurance”.

In a Global Risks 2012 report issued by the WEF’s Insight report, it concludes that leadership at both a national and organizational level need to improve the real and perceived risks within the industries with respect to public safety and in the tools of communication. Another critical recommendation is that transparency needs to improve in such a way that sharing information on risks must be improved to in turn improve public perception of the risk – i.e. give them better understanding. Many of the risks discussed in the report are macro such as the impact of global climatic changes etc. Whilst these are very high level risks and little can be done at an organizational level, whatever little can be done should be done and at the very least Directors and Executives of organizations need to understand them better in this ever-fast globalizing world.

Dellote (2008) defines 6 major areas of risk management which must be considered by major organizations which include:

- (1) Defining the Board’s risk overview;
- (2) Fostering a risk intelligent culture;
- (3) Integration and incorporation of risk intelligence into strategy;
- (4) Defining the risk appetite;
- (5) Executing the risk intelligence governance processes; and
- (6) Benchmarking and evaluating the governance processes.

They argue that these 6 areas of focus would reflect the view that risk taking for reward and growth is as important as risk mitigation to protect current assets and operations. Once this becomes part of the considerations always looked at in the decision making processes by Boards, generally a more risk averse strategy. This in turn will effectively ensure more a sustainable and

robust business model for any high risk organization following that as such this would in-build effectively reliability in the strategy.

Because the more complex organizations have interconnected processes whilst an operational risk may be credible and accepted by a Board, such as a fire in a plant – the magnitude of the impact of the direct damages is by far less than the implications of the stoppage of operations and the repercussions on the supply chain and business continuity. The Buncifield Oil Storage facility (UK) is a great example where in 2005 it was completely incapacitated after an explosion/fire and which took 7 days to control with immense environmental damage. The terminal supplied 25-30% Heathrow Airport, Jet Fuel (the busiest international airport in the world) and when those supplies were interrupted there were serious operational and financial implications to Heathrow [MIIB, Report No. 3, 2007].

According to O'Dwyer (2013) – National Oil Companies (NOC) survey results, one of the top three risks along with political instability and rising operating costs are the environmental (EHS) risks and concerns according to NOCs, International Oil Companies (IOC) and Independents. The oil service companies also see EHS as a top-three risk.

3.6 Summary

The GCC states require a good and solid framework going forward for good EHS practice and governance. This is particularly important with fast changing socio-economic drivers where the region's economy relies heavily on high risk/high reliability businesses. This thesis will contribute to that framework.

The BDI-GCC as discussed in section 2.1 was established to develop and improve and influence the standard of Boards in the GCC. Whilst they have not really looked at EHS issues to date, they have in their programs addressed both financial and non-financial performance review and management. Their program also focuses on highlighting the legal and

fiduciary duties that boards carry and some of the aspects discussed in section 2.6 on the legal imperatives for EHS.

The developments in corporate governance have become more profound with the economic challenges that have been faced in many parts of the world. This serious sense of ineffective corporate governance and control specifically in the context of financial issues has driven a transition from management system control philosophy in EHS to more HRO development, stewardship and engaged leadership.

Much of the recent work on HROs has highlighted the importance of a more engaged leadership role in organizations. Many of the new corporate governance standards especially those highlighted by the IoD, UK-HSE and OECD have started to talk seriously about EHS risk management in a more pronounced and overt fashion emphasizing the need for leadership both at the executive and board level to play that engaged role. Whilst much of this development has been from a Western context these frameworks with respect to the legal context influenced many internationally based corporates working in the GCC area. These corporates have a direct influence on Boards, especially in the joint venture (JV) and joint stock companies of which many energy and energy related companies such as the *Abu Dhabi National Oil Company (ADNOC)* which has various shareholdings with Oil Majors in their different production subsidiaries, *Tatweer* (a JV between the Government of the Kingdom of Bahrain, *Oxy* and *Mubadallah* from the UAE), *ASRY* (A Major Heavy Construction JV involving 5 different Arab States) and there are many similar examples with large high-risk operation companies in the GCC region.

In that sense the EHS leadership research and that relating to safety culture development in organizations continues to really drive this point very strongly, going to the extent in saying there cannot be a real effective control and development in an organization without the serious leadership involvement and engagement. Boards have to get involved in monitoring and managing EHS risks. To this end leading from the top and achieving a

company-wide buy-in and understanding process safety management (PSM) will decrease future financial liabilities [Fowler, 2011].

The role of the Board Chairman as a chief risk governor and the CEO/MD playing the role of a chief risk officer has become more pronounced with corporate governance codes of practice. The relationship between these positions is important and the board members' competence and board structure all play a role. There is very little in the way of corporate governance and EHS leadership/EHS management systems combined reviews and published papers. There are a few anchor references which have been discussed in this chapter such as the joint HSE-IoD and the OECD publications. As discussed in sections 1.5 and 2.2 their review is very much part of the fiduciary duties regardless where the enterprise actually physically operates.

In saying this there is evidence that in more progressive companies in recent (best practice) research to trade experience with expertise when recruiting new board members [PWC, 2010]. This includes those who understand global environmental challenges, social responsibility and sustainability.

The legal and regulatory imperatives and the more recent developments in taking persons in senior organizational roles and even boards to task is extremely insightful and will help shape a more informed leadership in the future. What must be explored further is to what extent have these developments brought about changes in the corporate leadership's approach to wanting to understand more. In the GCC there are also interesting and rapid developments towards greater regulation and establishing of accountabilities. As discussed in section 2.6 the laws and regulations in the GCC with respect to EHS are becoming more structured and prescriptive to address EHS particularly from the perspective of the requirements for organisations to establish management systems.

With increasing numbers of global cases being tried the degree of foreseeability in the industry which will in the future be put to the test.

Organizations will have to argue that the best practices they instituted are in fact so, and that they have learnt from other global incidents. Furthermore, as the lawmakers and jurists are learning more about the semi-technical concepts of risk management; boards and executives failing to demonstrate that they have been diligent in preventing losses will subsequently become more prone to potential liabilities both as organizations and as individuals.

From becoming more green to demonstrating their responsibility as socially responsible organizations towards their employees, contractors and the society at large, organizations are having to play a proactive role in presenting themselves in that positive light [Phyper & MacLean, 2009]. Having EHS incidents where lives are lost, significant damage to the environment is caused or otherwise is very damaging to the bottom line and shareholder value. Moreover, the expectation from leadership to step up to the plate and expectations to demonstrate what they did to prevent something like this from happening is now for them a fact of life.

In this chapter, the author also discussed communication, of being informed and the importance of effective reporting lines. The role of the EHS practitioner has changed from the discipline engineer or practitioner to an important technical risks' advisor to the leadership be they executive managers or directors. Their role in prevention cannot be overstated given their knowledge and specialist expertise.

Whilst this chapter concluded with a section on the research relating to risk management, it is clear from the research evidence that the concepts of ERM have become the new way that boards and executive leadership are able to manage risks which have been established to being some of the more serious in high risk/high reliability industry.

Dufort (2013)² explains that ultimately risks are an essential part of doing business and setting the appetite for risk and risk control strategies will help ensure organizations meet their objectives. To add value however, companies must go beyond compliance and look at how risks can be

integrated into every significant decision – the creation and dissemination of a sound risk culture. Thus be aware of risk and leverage it correctly. No doubt also that the BoD member must be a strategist as well as a constructive challenger aware of his/her fiduciary and higher organizational interests. They should be “competent” enough to understand the kind of EHS risks to add value to an overviewing of an organization’s performance over time in order to deliver a sustained business operation.

Serious and systemic consideration of risks was of equal importance to the drive towards increasing performance and in general good governance. The role of the audit committee should be separated from that of the role of the risk committee which should have a different approach to looking more at Enterprise Risk Management and focus outwards (externally) on emerging and dynamic risks rather than the internal risks of non-compliance Coulson-Thomas (2013).

Ultimately “....*managing a major hazard business should be a clear and positive process safety leadership with board level involvement and competence to ensure that major hazard risks are being properly managed*”. [HSE, 2011, Page 11]

It is critical that we therefore explore all these aspects with actual CEO/MD and other top leadership in organizations directly to understand how much their views are truly aligned with the many academic and practitioner views presented in this literature.

3.7 Conclusion: A Preliminary Model of EHS Governance & Leadership

In this section the key concepts and ideas that feature strongly in the above literature review chapters are synthesised into themes. This allows development of a preliminary conceptual model of EHS leadership and governance, as discussed in chapter 1. Whilst this is exploratory research the model is expected to go through iterations and will be modified further when

emerging themes from the field research are added to complement the desk-top literature review.

Nine key themes connecting corporate governance with EHS leadership in high risk/high reliability organizations emerged from the Literature Review through the analysis of the anchor references as shown in Table 3.4 below. No-one has yet synthesised these 9 themes, that have been extracted from the various publications, research papers, research reports, best practice standards and some of the guidance and articles from professionals in the fields of corporate governance and EHS leadership. They can be summarized in the following table 3.4:

Table 3.4 Themes evolving from the Literature Review with Anchor References

Theme	Theme Title	Theme General Definition	Anchor References
1	EHS Knowledge and Competence (of CEOs and Directors)	Can be defined as the basic knowledge of EHS matters to lead as a CEO or direct as a Board Member and this defines the basic competence requirements for this job with respect to EHS.	HSE (2006) – RR/506 OECD (2012) HSE/loD (2008) HSE (2011)-HSL Roger et al (2009)
2	Safety (EHS) Leadership	Can be defined as the leading actions driven from a sense of responsibility and accountability for EHS and Safety.	Roger et al (2009) Roger et al (2010) HSE (2011)-HSL HSE (2006) – RR/506 OECD (2012) HSE/loD (2008) Bibbings (2008); (2010) CSS (2008)
3	Risk Management	This can be defined as the holistic evaluation, review and monitoring processes for the control of EHS and Safety risks that an organizations may face	HSE (2011)-HSL HSE (2006) – RR/506 OECD (2012) Roger et al (2010) Bibbings (2001); (2009) Booz and Co (2010) Hopkins (2002)

Theme	Theme Title	Theme General Definition	Anchor References
4	Influence and Accountability	Can be defined as the appreciation to the impact of decisions and actions that a senior executive and board member may have and the accountabilities that carries as a consequence.	CSS (2008) HSE (2006) – RR/506 OECD (2012) HSE/loD (2008)
5	Developing a Safety (EHS) Culture and Communication	Can be defined as the development of the organizational culture where safety is a core value and where open, transparent communications are a norm.	HSE (2011)-HSL Roger et al (2009) Roger et al (2010) HSE (2006) – RR/506 Hopkins (2002)
6	Reporting Structure and Hierarchies	Can be defined as the reporting levels and access to senior decision makers. This is for both persons and functions	MacLean (2011)-1 HSE (2011)-HSL HSE (2006) – RR/506 MacLean (2007)
7	Legal Imperative for Safety	Can be defined as matters of EHS and Safety which have any legal bearing and impacts.	HSE (2006) – RR/506 OECD (2012) HSE/loD (2008) Roger et al (2009) HSE (2011)-HSL
8	Operational Excellence & Strong Integrated Management Systems	Can be defined as the systematic management of safety, health, environment, reliability and efficiency to achieve world-class performance.	HSE (2006) – RR/506 OECD (2012) HSE/loD (2008) Roger et al (2009) HSE (2011)-HSL Bibbings (2000) MacLean (2006) Booz and Co (2010)
9	Monitoring of HSE Performance	Can be defined as the processes of target setting, and monitoring EHS/Safety performance and subsequent management actions to improve and maintain performance.	MacLean (2011)-2 CSS (2008) HSE (2011)-HSL Bibbings (2010) Bibbings (2000) Bibbings (2005) HSE (2006) – RR/506 OECD (2012) HSE/loD (2008)

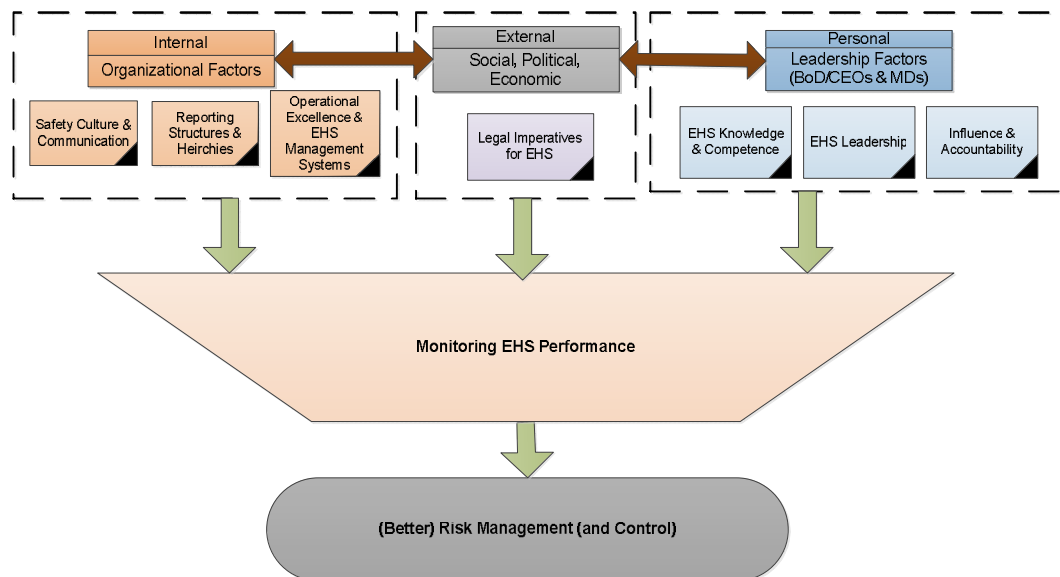
A critical review was undertaken with the anchor references.

These 9 themes provide a comprehensive initial framework that will inform the empirical research. The themes are not completely discrete or independent, yet they can be separated for the purposes of further structured exploration.

However, the empirical research is designed to expand upon these themes, to provide insight into the existing themes and to explore other themes that arise from studying EHS in the unique environment of the GCC. The researcher at this stage develops an initial conceptual model to attempt to explain the inter-relatedness of these literature review established themes.

Figure 3.1 splits the 9 themes in to 5 distinct groupings.

Figure 3.1: Initial Thematic Conceptual Model of EHS Governance and Leadership



Seven of the factors are grouped into three key areas of organisational (internal) factors, personal leadership factors; and socio-economic/socio-political (external) factors, the themes are placed within these factor areas. This helps identify the relationship better between the themes. The remaining two themes are considered more as output factors rather than

factors that fall into the three areas. So monitoring is influenced by the internal, external and personal factors and in turn influences the level of risk management.

The researcher used a process context (i.e. of inputs, processes and outputs) to relate between the factors and the themes that belong to the factors. We find that the internal factors which include Safety (or EHS) culture and communications; Reporting structures and hierarchies; and Operational excellence and EHS management systems all seem to be related to the organisation directly and are to do with the workings of the organisation. The organisational culture and communication practices, the organisational structures and the management systems are all developed from within over time, are based on creating a governance structure and creating a culture of EHS compliance. Setting standards for example and ensuring there is adequate communication through a clearly defined organisational structure all within an organisational culture which believes and respects EHS, provides a good platform.

The external factors to an organisation can be related to market (economic) dynamics, social aspects and political matters. As was seen in section 3.2 above there is a relationship between corporate social responsibility and accountability and EHS. The literature review suggests these share many values and relate strongly to each other through the fact that EHS relates to worker welfare and that is where the social perspective comes in. However, it is yet to be seen if that is the factor that is driving EHS governance and leadership, or whether it is the legal imperatives that drive EHS governance, oversight and leadership. In this model we assume that the legal imperative from EHS is the key driver and this also takes into account the socio-economic and socio-political aspects.

The other themes including EHS knowledge and competence; EHS leadership and influence and accountability are all seen as personal factors of senior leaders within an organisation. The EHS knowledge and competency element seems to be something which is being addressed

through senior managers' and directors' codes of practices, information documents and perhaps some training. It should be appreciated that board directors and to a lesser extent CEOs/MDs duties are defined generically to overview, monitor, control and set a tone for an organisation. Therefore, in this context we view EHS knowledge and competence from the perspective that these persons lead and direct high risk organisations which need to be high reliability organisations.

Following directly from the above, the sense of ownership and responsibility should drive that sense of accountability. The influence is very much inherent in the job of a senior leader, as they are looked to for direction and to emphasise the values and empathise with the challenges that the organisation face. However, it is with EHS leadership, which we defined after the literature review *as the leading actions driven from a sense of responsibility and accountability for EHS and Safety*, that this influence and accountability becomes pronounced and effective.

These three areas, internal (organisational) factors; external (organisational) factors and personal leadership factors all contribute to better effective oversight, overview and monitoring of EHS performance. It is assumed that the role is monitoring as much of the EHS performance matters are perhaps more operational in nature i.e. managing the risks at the operational and day-to-day matters. Whilst a strategic direction for EHS is set by the leadership team both at Board and then at executive level, monitoring is the core responsibility of the leadership team.

It is through this effective monitoring, which includes ensuring that the organisation implements corrective actions to ensure a continued acceptable level of EHS performance, that a **better risk management and control is achieved**, leading to safer and more environmentally friendly operations which protect the health, safety and welfare of employees, contractors and all the other organisational stakeholders.

To this end, because the key purpose of better EHS systems is to change organisational status from high risk, to high reliability organisations, the ultimate output of the combined organisational and personal efforts of the individuals leading these organisations both in an executive and non-executive capacity is better risk management. This is what ensures continued profitable and ultimately a sustainable and reliable organisation.

In the following chapter the author discusses the methodology and the underpinning philosophical assumptions for the approach undertaken in the methods selected. Whilst the model is not being tested in a conventional sense, the questions that are developed in a survey instrument and the semi-structured questions using in the qualitative enquiry are somewhat based on interrogating the themes that have emerged in the literature review and in fact the basic conceptual model that has evolved inspired by the key themes.

Chapter 4 – Methodology and Methods

4.1 Introduction

This chapter demonstrates how this research work has evolved starting with the broad concepts of organizational safety culture, safety (EHS) Leadership within the context of corporate governance in high risk/high reliability organizations. Guided and influenced by some previous academic and management research that the author has been involved in together with being a practitioner for many years – the exploration of how EHS leadership can have an impact on the performance of high risk/high reliability organizations seemed extremely appropriate.

There are many challenges the industry faces with dynamic risks and what has become evident is that High Risk Organizations need to become High Reliability Organizations especially with fast changing macro and socio-economic factors particularly in the Middle East and the GCC. Much of this was discussed in Chapters 2 and 3; where it was understood that it was imperative that an appropriate methodology was selected that would best address investigation into the perceptions of senior leaders on safety leadership and governance matters.

One of the main issues with this research has been the scarcity of references on this subject directly. Much of the work on EHS leadership has been focused on EHS at an operational and perhaps tactical level rather than a strategic level. Perhaps this may reflect the view point that EHS matters remain very much an operational and perhaps at times tactical and less strategic in the minds of many leaders?

This chapter explores the approach adopted within the research to data collection and analysis and the use of mixed methods to try to gain insights into the perception of senior leaders within high risk (and perhaps high

reliability) organizations. It seeks to better understand looking at “*Directing* EHS Matters” rather than merely “*Managing* EHS Matters”.

The chapter contains the aims and objectives of the research; a very short discussion of the development of mixed methods within the philosophical epistemological grounds of mixed methods research; the rationale for the choice of mixed methods; the research design and research strategies and the details of how both the quantitative and qualitative enquiries are undertaken. It explains how the data were collected, interrogated and analysed and concludes with a reflective piece to highlight the researcher-research relationship including an account of the advantages and disadvantages of being a seasoned practitioner in this field of study.

4.2 Aims and Objectives

This research is focused on engaged scholarship. Therefore there are multiple aims and objectives for the *Thesis have the following objectives:*

What are the perspectives of the senior leaders in high risk and high reliability organizations operating in the GCC region on Environment, Health and Safety (EHS) leadership and governance matters?

The Aims and Objectives are proposed to being:

1. Develop a basic framework for understanding corporate EHS leadership and governance.
2. To undertake exploratory research to understand EHS leadership and governance in HROs in the GCC region.
3. Develop an exploratory research methodology to best investigate the current themes and evaluate if there are any other themes that exist with respect to EHS Leadership in the context of Corporate Governance:

- Using quantitative research methods to assess the focus of senior leader's perception
 - Using qualitative methods to examine the rationale, reasoning and underpinning discourses of senior leadership
 - To combine qualitative and quantitative research methods and demonstrate the utility of such an approach
 - To explore and demonstrate how these two methods of study provide a better contextual understanding of senior leadership's views on EHS governance
4. To contribute to the development of research in EHS leadership /governance studies in the GCC and where such findings may add value to other such industries in other regions in the world.
 5. To explore the potential of developing a new framework and a model for EHS Leadership and Governance which helps explain the key components.

4.3 Research Ethics Approval

An application to the University of Bradford Research Ethics Committee was undertaken on 1st April 2012. After receiving formative feedback a re-submission was required and this was undertaken on 1st June 2012. The approval to proceed with the research was obtained via an ethics approval committee meeting that was granted by the Humanities, Social and Health Sciences Research Ethics Panel at the University of Bradford on 25th June 2012.

4.4 Philosophical Approach to this Research

In any such in-depth research as presented in this thesis, and especially one which is so exploratory, it is critical at this point to address the philosophical approach of the researcher. As the researcher approaches this research as an engaged scholar, the researcher is a key instrument in the research itself. He collects data directly through both a questionnaire instrument and semi-structured interviews and examines the data directly himself.

The researcher holds a more scientific and objective approach to qualitative research, like that of an applied research methodologist. As such the focus is on the research design rather than philosophical assumptions, although it is appreciated that assumptions cannot be separated from the research design or procedures. This research is directed towards more engaged scholars and academics in the field of management research.

In saying this, this thesis is located within an objectivist epistemology and its theoretical perspective is positivism. Its methodological approach is qualitative positivism.

An objectivist epistemology 'Holds that meaning, and therefore meaningful reality, exists as such apart from the operation of any consciousness' [Crotty, 1998, Page 8]. The researcher located within an objectivist epistemology understands that meaning is inherent in what is studied, that the researcher's aim is to discover that meaning, and that the researcher should not in any way influence what is studied [Crix, 2004]. Positivism requires the gathering of empirical data that allows the researcher to discover the true meaning of what is being studied.

Research in management and business studies has been dominated by positivism as noted by Hassard and Kelemen (2002). Pfeffer's (1993) highly influential paper argues strongly for its continued importance. In the last 20 years or so, qualitative approaches to research have come to be dominated by interpretivist rather than positivist approaches [Crotty, 1998]. Here, the

researcher is interested in how 'reality' is constructed through language, discourse and interaction. The researcher's subjectivity and influence upon the research is acknowledged. However, positivist qualitative methodologies continue to flourish although sometimes referred to as 'postpositivist' [Creswell, 2013]. The positivist qualitative researcher presumes that participants can describe a reality in which they participate, not one that they constitute. The words they speak in interviews are therefore regarded as an accurate reflection of that reality, and can be analysed using systematic procedures such as content analysis and grounded theory [Cresswell, 2013].

The challenges of this research was for the researcher to spend more than 1-2 hours with those who were being researched and try to objectively ascertain their position, their reality and determine their world views on questions that were created on the basis of certain themes and factors which were highlighted through the literature search.

4.5 Mixed Methods Research – Research Approach/Description

The use and application of mixed methods has seen substantial developments in the past decade or more and has also gained greater visibility within the past few years. It is recognized that rigorous mixed methods designs that are able to integrate effectively various procedures for the transfer of evidence amongst the two traditional methods of qualitative and quantitative methods [Castro et al, 2010].

Whilst mixed methods are not completely new, its wider-spread use to a critical mass is a relatively recent development in social research [Bergman, 2012]. For example the Journal of Mixed Methods only launched publications in 2007. There have also been some subsequent important anchor texts in Mixed Methods Research (such as Creswell and Plano Clarke (2011) first published in 2007; Creswell (2009) and even earlier with Tashakkori and Teddie (2003) to quote a few examples.

There has been marked growth in Mixed Methods Research (MMR) and it is the definition of mixed methods which seems to have created some inconsistencies in use. A project which involves both a qualitative and quantitative study may not be defined by some scholars as mixed methods as they focus more on how the two sub-studies relate to each other and if the study was initially designed as a mixed methods study (i.e. sequential, concurrent or otherwise) [Tashakkori and Creswell (2007)].

Mixed methods are at times called multi-strategy research methods as they use both qualitative and quantitative methods within the same research design strategy (Walker et al, 2004). Bergman (2011) explains that mixed methods perhaps should be called *blended* methods research and refers to the conflicting or separate paradigms which both Quantitative and Qualitative research methodologies sit within. Quantitative approaches have evolved from a paradigm based more on positivist philosophical worldviews in which social sciences are seen as phenomena having an objective reality. On the other hand whilst some Qualitative research can be based on a positivistic approach a significant amount is also based on another philosophical view in which the paradigm sees the social sciences phenomena that finds their meanings constructed by the people who are involved in using them rather than the external objects which are independent of them in clear contrast to the positivist's view (Walker et al, 2004).

Research is an exploration of the truths and realities through the gathering of data, information and facts etc. with the aim of enhancing knowledge. More exploratory research can be said at times to be more a process of interpreting a conclusion from particular instances which is generally more inductive rather than deductive. Deductive research is a process in which logical conclusions about particular instances are drawn from general premises and/or statements. As such the nature of the research methods which are more inductive tend to be at times qualitative and the nature of research which is deductive tends more at times be quantitative. Thus quantitative research uses the deductive methods through the general development of a hypothesis.

It is interesting to note the observations made by Johnson & Onwueghuzie (2004) in saying that positivist scientists may argue that science and the truth involves the confirmation and falsification and that as such methods and procedures are to be carried out objectively. However, there is still subjectivity in the whole process starting from the epistemological choice in the first place right through to the interpretation of the results which, especially in social sciences will inevitably carry some subjectivity.

The debates continue as do the “paradigm wars” [Feilzer, 2010]. The concept of a single objective reality has been argued by positivist and post positivist researchers in their scientific approach to addressing research-based enquiry. On the other hand researchers from social constructionist and postmodern perspectives have argued and debated the significance and added value of qualitative enquiry in social science research which deals with a more complex set of relationships and dynamic changes within society [Johnson & Onwueghuzie, 2004]. This discussion has been central to the mixed methods research design debates [Creswell & Plano Clarke (2011)].

Mixed methods can be defined as “...research in which the investigator collects and analyses data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or program of inquiry”. [Tashakkori and Creswell (2007), Page 4].

Another definition is: “Mixed Methods Research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone”. [Creswell and Plano Clarke (2011), Page 5].

Cameron and Molina-Azorin (2011), in reference to earlier work explain that mixed methods developed over four key periods/eras including the 1950's to

1980's which are known as the *formative period*; *paradigm debate period* which went from the late 1970's until the early 1990's; the *procedural development era* between the 1980's and 2000; and then the beyond 2000 in which the era can be described as the "advocacy period" as a *separate design period* in which the more conceptual movement has evolved. Mixed methods continue to evolve and develop.

Epistemologically, Feilzer (2010), supports the case that pragmatism as a research paradigm supports the use of a mix of different research methods as well as the "*....analysis and a continuous cycle of abductive reasoning while being guided primarily by the researchers' desire to produce socially useful knowledge*" [Feilzer, 2010, Page 6].

Tashakkori and Teddie (2010), put it more simply using the utility value of data for the "*Everyday Problem Solver*", by saying that if you were lost in the woods and only had a compass, mobile phone and flashlight, you would not throw away any of them and try to use all these methods to get yourself out of the woods! Their pragmatic approach highlights the value of using mixed methods to help a researcher solve a research problem through using the continuum that stretches across both methodological and philosophical dimensions.

It is critical to be reminded that whilst MMR can be considered a third paradigm as opposed to the traditional mono-methods [Tashakkori and Teddie (2010)], the goal of mixed methods research is not to replace either of these approaches but rather to draw from the strengths and weaknesses of both in a single research study and across studies [Johnson & Onwueghuzie, 2004].

Creswell and Plano Clarke (2011) explain that mixed methods research can be defined as more of an approach or methodology which combines the use of qualitative and quantitative methods including the data collection, analysis and inference stages. The methodology can be used to gain greater insights

and for the purpose of extending the breadth and depth of understanding and collaboration.

The mixed methods research adopted within this study combines qualitative and quantitative approaches both from a positivist epistemological approach. Simply those who support this methodology argue that using mixed methods very much help the researcher increase the value through enhancing the validity and generalizability of the results. Easterby-Smith et al (2013) suggested that this in turn may lead to a greater potential theoretical contribution. The argument against the use of mixed methods by sceptics alludes greatly to the lack of competence in researchers in conducting different methods.

And they may be right in saying this as in some original research by O'Catheine et (2008) on the quality of mixed methods studies in health services research, they concluded that out of 118 mixed methods studies many of the researchers ignored mixed methods design in both their proposals and reports; there was a lack of transparency of the individual methods in terms of clear exposition of the data collection as well as the analysis; and also in many cases there was very little or no attempt to integrate between the data from the two different studies. This leads me to suggest that the quality of mixed methods research will be critical to its development and more serious consideration in both academic and practitioner research in the future as research must be rigorous no matter what method or combination of methods are employed.

Some scholars have commented that it would seem appropriate for pragmatism to be the natural choice of the mixed methods researcher [Harrits (2011); Johnson & Onwueghuzie (2004); Feilzer, 2010 etc.]. However, it is important for the mixed or multi-methods researcher to appreciate to what extent the study is mixed methods in the research strategy and design. Study design issues are explored further on but the acceptance levels of mixed methods research as discussed by Cameron and Molina-Azorin (2011) depend greatly on the design of the study and on where

the methods are actually being integrated. For example, it raises questions in relation to whether the mixed methods are being deployed in the framework, data collection, analysis and/or data analysis and making inferences on the whole study. This has been identified as a crucial issue in such mixed methods research studies (see Cameron and Molina-Azorin, 2011 and Molina-Azorin, 2010).

The power of using a mixed method design can be said to be more far-reaching in case study type and exploratory research in which either (i) we start with an in-depth qualitative enquiry and formulate an explanation or theory which can then be further tested using quantitative survey methods; or (ii) vice versa in which the methods can be employed to undertake a large scale survey, and then collect data which can then be further interrogated using more quantitative methods in order to gain a richer picture as described by Tharenou et al (2007).

Parry et al (2011) give a very good example of how sequential mixed methods helped develop a quantitative tool from a qualitative enquiry using inductive content analysis. They used key words from interviews (as opposed to themes). Another good example is the Diaz-Garcia & Brush (2012) study on gender and business ownership where the opposite was done where a quantitative tool was developed and used initially and this was followed with a qualitative enquiry to explore and explain better the complex moderating effects of gender on performance etc. The study concluded with a call for using mixed methods research in these kinds of studies to gain insights that lead to the cumulative knowledge in this area.

Returning to the issues relating to the dichotomy between qualitative and quantitative methods, Plowright (2012) rejects this on the basis of a need for as he describes it as “*a fresh look*” at social and educational research. The complete distinction between the methods is rejected and in fact an invitation for the researcher to combine between these methods to add greater value in management research by exploring the underlying meanings and concepts of the different methods is what Plowright (2012) describes.

Byran (2010) explains that mixed methods can be used for a variety of reasons or what he calls “*rationale*”. His long list of reasons include **Triangulation** which he defines as the results of an investigation from a research strategy are employed in the cross-checking of the method assisted with another research strategy; **Offsetting** where the implication is that the weaknesses and biases of one method can be used to compensate for another method etc. which is apparently rarely used; **Completeness** which implies the use of one method to compensate for the limitation of the other method such as using a structured questions protocol to compensate for information that cannot be obtained through observation in ethnographic methods etc.; **Process** in which we can use qualitative enquiry to give us a more process-ual picture of social life to help bring about greater value in the more static quantitative inquiry in social/management research; **When using different Research Questions** which are related to the same overall study; **Explanation** where we try to use qualitative enquiry to better understand for example variable and ascertain if they are dependent or independent etc.; **when dealing with unexpected results** especially from a quantitative enquiry and you want to use that data to understand better why; **Instrument Development** where we use in-depth qualitative enquiry to help in the design of quantitative instruments such as surveys/structured interview instruments and others such as sampling; to give research **credibility** when the potential respondents “expect” a certain method/instrument and to give greater context to the Research.

In mixed methods research where we are trying to gain greater insights into the **context** we use the qualitative methods to provide greater depth to our quantitative data. This is extremely important as the surveys are limited in that they will give very good information about degree of agreement/disagreement to statements which can give us an indication of perception, but at times completely opposite views may impact greatly on statistical and quantitative analysis. An in-depth qualitative enquiry allows us to explain the differences and to some extent the reasons at times for the degrees of agreements/disagreements to statements.

There are also other reasons for using mixed methods which include **Illustration** in which data analysed even at different times from both quantitative and qualitative enquiry can be used to illustrate key findings from social type research; **Utility** which is very important in engaged scholarship as a mixed methods research study would be used in which the findings would have most value in application of findings, and at times not using both methods sequentially or even in parallel may not only not give us the right level of understanding, but we may not have enough depth of understanding to formulate effective solutions; **Confirm and Discover** which is the most common rationale for the use of mixed methods as when the methods are used sequentially, one method discovers the findings and then the other method is used to explore and test the same; **Diversity of Views** can be used when we want to study separately the opinions or persons say using qualitative interviews and then explore more scientifically issues using quantitative methods – but more like having two studies at one time and this is usually done when researchers are trying to be opportunistic when they get access into an organizations to research etc. And finally **Enhancement** which is an advanced method of triangulation in which the researcher will go back and forth through the data to enhance and confirm key findings and this method is particularly valuable when using conceptual view investigations for example when relating focus group findings to both survey and interview findings etc.

Design types for concurrent MMR approaches included triangulation; off-setting; when determining a diversity of view or when trying to deal with different research questions. Other rationales were mainly for exploratory research designs [Harrison and Reilly, 2011].

Operationally mixed methods can also be very useful to investigate sensitive issues within organizations [Jehn and Jonsen, 2010]. They argue that when investigating sensitive organizational issues mixed methods can demonstrate a more accurate and thorough understanding of the organizational issues when mixed methods are used as opposed to a standard, mono-method approach and systematic manner. They explain that social desirability

answers and at times even dishonest answers to questions may occur which render the subject vulnerable to questions that may reveal details they may find very personal or intimate. Therefore the use of mixed methods can help obtain data in two ways also limiting the direct and difficult questions.

Harrison and Reilly (2011) conducted a review of the use of mixed methods in marketing research and showed that even within MMR the way the multi-method process was employed was different. In their review of 34 studies which employed mixed methods of data-collection and analysis, sequential mixed methods were used in the majority of cases (79%) and they mostly prioritized quantitative methods whereas in contrast concurrent mixed methods was employed in only 19% of cases. Concurrent studies looked at converging that data at the interpretation or analysis stage.

There are predominantly six main types of research design in mixed methods or (as they may be called) protocols: The first three are *Convergent Parallel Design*, *Exploratory Sequential Design* and *Explanatory Sequential Design* [Creswell and Plano Clarke (2011)]. The latter two methods use one method to help develop the grounds for the next method. *Explanatory Design* starts with the quantitative method which then is followed by a qualitative method in order to “explain” better the results of the research, whereas in *Exploratory Design* a qualitative enquiry helps build a model for a quantitative data collection and analysis. In the *Convergent Design* use both methods, collect the data and compare and relate the same.

The other three research designs include the *Embedded Design* related more to using one method within the framework of another predominant method to help enhance or test certain aspects in the research; the *Transformative Design* is similar to the *Explanatory Design* only that the decisions made by the researcher within a theoretical framework and the multiphase design in which the research may go through three stages, qualitative, quantitative and mixed method where one method findings informs on the next phase of the research [Creswell and Clarke, 2011].

This section covered the literature on the work that has been done on mixed methods research design. As can be seen, the mixed methods research design has developed over a period of time and has its functionality and support from various scholars. Methodologically some scholars have criticized it for technical reasons which relate very much to the level of competence of researchers in both methods. In the next section the choice of design of this MMR work is described with some justification to the selection of the design.

4.6 Choice of Research Methodology/Research Design - Rationale for this Study

This is a mixed methods study in which the rationale for using both the quantitative and qualitative methods concurrently was five-fold:

- (1) **Greater Context:** Given that this was exploratory research the development of the quantitative survey was really to test and compare between the degree of acceptance and more accurately to gauge the agreement of senior leadership to the emerging themes from the literature review. But this needed greater context and therefore the quantitative enquiry is used to gain understanding of the differences between the perceptions on themes and a broad comparison between these themes and also at a later stage to see if statistically more leading, dominant or overarching themes can be established. Here we use the qualitative methods to explain “Why?”.
- (2) **Utility Value of this Research:** This research is a piece of engaged scholarship work of action-based management research (i.e. one of the key objectives of the DBA), the mixed methods approach seems to give greater insights and findings which can be converted directly into workable solutions and thus recommendations for industry to take things forward.

(3) **Instrument Development:** Whilst the two methods were used, and both survey questions and the semi structured protocol related to the same emerging themes from the research, the use of the methods concurrently also served the quantitative method as a secondary validation, which in turn allows - at a later stage - for the refinement of the survey tool and thus this helps improve the survey instrument for its future/further employment.

(4) **Answering different Research Questions:** The research in this way enables the researcher to answer more than one research question at a time. Whilst the themes emerging from the literature review may have seemed to be universal and potentially of equal importance, the perception-based survey enquiry using the quantitative method allows for better understanding of perception of importance (i.e. which themes are really key out of the 9 – stronger (agreement/disagreement) views denotes greater affinity to the theme). Whereas the qualitative enquiry gave a richer and deeper picture and also explained why at times there are completely opposite perceptions from different survey participants when certain questions were asked.

(5) **Enhancement:** This research tries to best describe the area of contextual overlap between EHS, Governance and Leadership. There is triangulation here where both the method strategies are linked to one another. More importantly, it is through drawing conclusions from both sets of data that we are able to enhance and better confirm findings with more confidence and also perhaps greater generalizability where appropriate.

As for the research design, a convergent parallel design (which is sometimes referred to as a concurrent mixed method design [Jogulu and Pansiri, 2012]), was felt to be best in this study. Whilst this is exploratory research to a great extent, the researcher identified that there was scope for doing the research concurrently through:

- (1) Building on some of the strong concepts and themes that seemed to be coming out through the literature, the initial model could be tested using a quantitative instrument which could be face-validated;
- (2) The qualitative review using a semi-structured interview protocol would explore the same themes established in the literature review, yet it would also help to see if there were any other concepts or themes that may emerge at the same time;
- (3) The mixed methods approach as described briefly in (1) and (2) meant that it was possible to obtain this information from the same participants at the same time. Trying to do this concurrently would have proven not only challenging as this may have limited the accessibility to such senior leaders and their willingness to participate; one method could have influenced the next method if time was given between the two, especially if the qualitative method would have been used first as is commonly done in an exploratory design.

In this study which is a concurrent mixed methods research study we look at converging that data at the interpretation or analysis stage as suggested by Harrison and Reilly (2011). Given the nature of the data collected in this study, this is felt, to be the best way to leverage on the mixed methods research mixed methods research methodology. **However, the outcome was that the quantitative data set was small, so it has been used to provide descriptive statistical background for the qualitative aspect of the study.**

The researcher used the methodology as suggested by Onwuegbuzie and Leech (2006) which talks about conceptualizing MMR design in 13 steps that include: (1) Determining study Goals; (2) Formulating the Research Objectives which was done very early on in the thesis proposal development stages. (3) Determining the mixed methods rationale, which the researcher started to undertake once the literature review themes started to emerge and the complexity of this study become apparent. (4) Determining the mixed methods purpose and (5) developing the research questions; the researcher

has developed and refined the research questions significantly although the very purpose of the study has changed very little. (6) Selection of sampling design and (7) selecting the MMR design were practically done at the same time as it was governed to a great extent with the approach that was required for the respondents and this also informed step (8) the collection of data stage.

In terms of (9) Data Analysis, this was done around the same time, moving from one set of data to the other (10) validating and legitimizing the data. The interpretation stage (11) was done concurrently with the discussion issues now emerging clearly from the enhanced picture which the two sets of data gave. (12) writing up the mixed methods research report or discussion and (13) reformulating the research questions was undertaken, but it is worthy to note that the continual word-smithing of the research questions was being done throughout the course of the research until the end.

4.7 Scope of the Study

Returning to the overall aim of this study, the GCC region is a generally oil rich region and much of the GDP profile has changed in the past few decades from an exploration and production region to a more diversified and mixed large and manufacturing-base industry region whilst retaining a great deal of its GDP still in oil-based exports. In exploration and production as well as other developing industries they generally share the commonality of being high risk industries. Therefore the drive has been to become industries of higher reliability in order to reduce incidents which have an impact on human life, assets, the environment at large and have better business resilience and continuity.

This study is a cross-sectional design study in which data are collected over a 4 month-period. The surveys and interviews were undertaken within this time period in 4 different locations in the GCC. Two locations were in Abu Dhabi and Dubai, in the United Arab Emirates; one location was in the

Kingdom of Bahrain and finally in Muscat the capitol of the Sultanate of Oman.

The types of organizations that were involved in the study included:

- (1) Non-Oil and Gas - Aviation – Both Navigation and Airport Operations (Transport).
- (2) Oil & Gas – Upstream (Production & Exploration) including Oil Exploration and Production Services (Energy).
- (3) Oil & Gas – Midstream (Processing/Manufacturing).
- (4) Oil & Gas – Downstream (Retail, Marketing including Product Storage and Movement).
- (5) Non-Oil and Gas - Power and Utilities (Energy).
- (6) Non-Oil and Gas - Heavy Manufacturing (Manufacturing-Production).
- (7) Non-Oil and Gas - Major Construction (Construction).
- (8) Non-Oil and Gas - Shipping (Transport).

Whilst the above industries do not include all the industry types, they cover the majority of the high risk and high reliability industry sector in the GCC. The only industry that was perhaps not covered was the petrochemical industry. This absence was due to accessibility and time constraints. Some of these industries were approached.

In recognition that the key objective is to use research methods to assess the senior leadership's perception on EHS from the corporate governance and performance perspective in high risk/high reliability organizations, a cross-sectional design was deemed to be suitable for this purpose.

Whilst a mixed methods study was undertaken, a concurrent data collection process was followed based on a survey research quantitative strategy and a thematic structured content analysis strategy for the qualitative strategy. This is discussed in greater detail in the following sections.

4.8 Study Design

This study is approached in 7 key stages. They are as follows:

- (1) Conduct an in-depth literature review focusing on the various areas relating to the research questions and study objective;
- (2) Develop a list of key emerging themes from the literature review which relate the areas that connect leadership, corporate governance and EHS in High Reliability organizations.
- (3) Develop the survey questions based on the emerging themes and pilot/validate the same with a 15-20 person expert-panel from different areas of expertise including law, safety, governance and EHS practice, ERM and general management.
- (4) Develop in parallel based on the emerging themes up to 10 semi-structured questions from the interviews to be planned. Interviews should be planned between 30-60 minutes in duration. These questions should be peer-reviewed by the supervisor and preferably a seasoned EHS professional as well.
- (5) Conduct the survey and interview with the respondents in one sitting – collect the data in the form of field questionnaires and recorded interviews or where consent is not given field notes (interview highlights) from the discussions would be recorded.
- (6) Undertake data analysis using descriptive and advanced statistics where possible with the survey data and use structured content analysis on all interview transcripts (qualitative data).
- (7) Draw conclusions, review and discuss and see if there are any other themes which emerge through the interviews.

The conceptual diagram and the model of EHS leadership and governance is developed further to stage 7.

These stages are described in Figure 4.1 below. Stage 5 is undertaken concurrently and data are collected at the same time and then analysed separately.

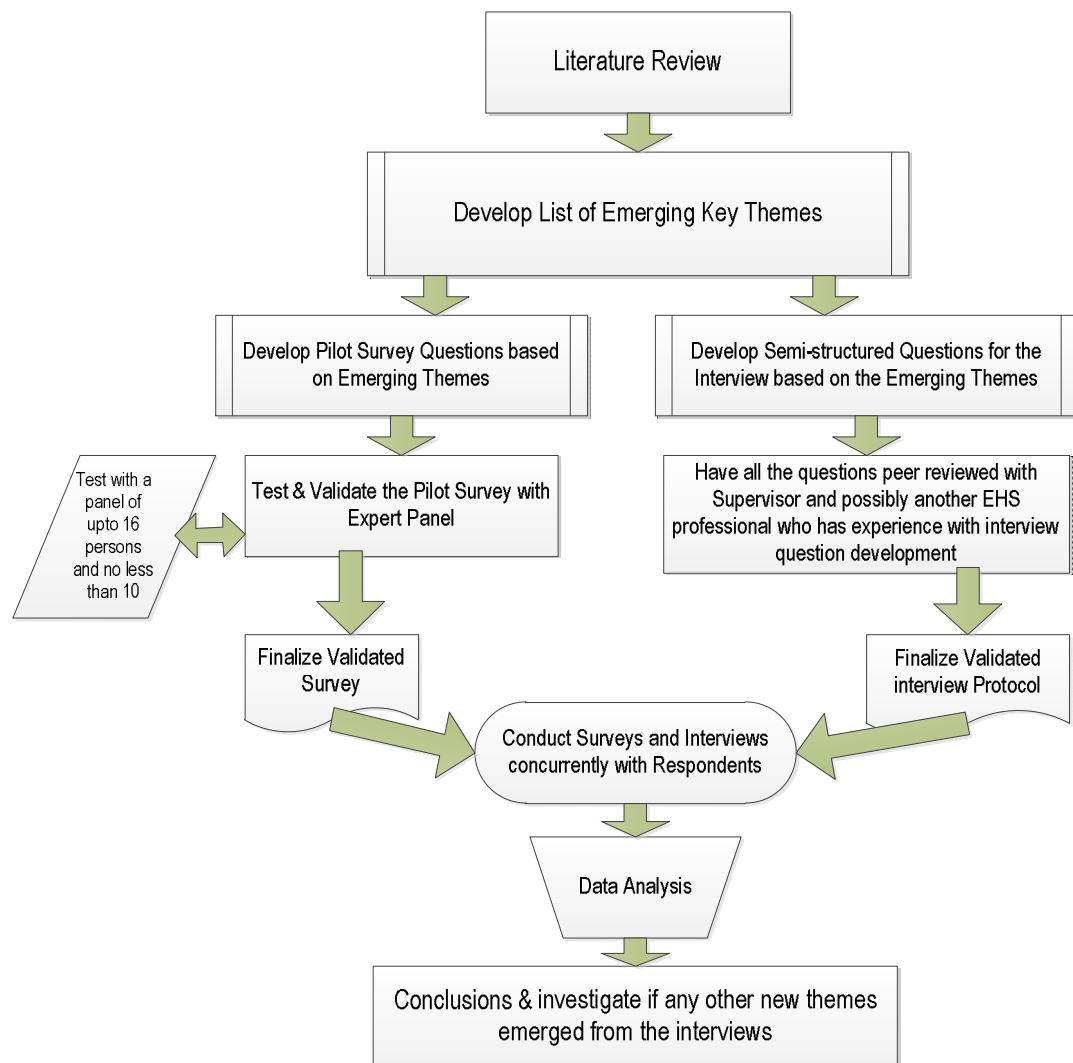


Figure 4.1 Research Design – Concurrent Mixed Methods Approach

4.8.1 - Stages 1 & 2 – Literature Review & Developing a List of Emerging Themes

An extensive literature review was needed to review examine the information and references which connected EHS leadership with both governance and other related matters. Whilst undertaking the reading, a list of key emerging ideas is noted. In the course of the reading more than 150 different ideas were listed from each of the references. These ideas were then grouped,

each group in effect creating an emerging theme. However, the themes that emerged were also strongly located within some of the key anchor references which numbered around 10 key references from the 200 plus that were reviewed.

The themes are separate but perhaps there is overlap between them. A good example of this is safety leadership and influence and accountability. Some research showed that good safety leadership is visible leadership which played a very big role in influencing positive behavioural safety change within organizations [Roger et al, 2010]. However, visible leadership has the power to influence. It is in this sense that there becomes a pronounced accountability that the employees would see [O'dea & Flin (2001)].

Another example of this is Risk Management and the Legal Imperatives for Safety. Non-compliance to statutory legal matters may lead to fines, prosecution and other negative consequences [Forlin, 2012; Brainich & Harris (2012) etc.]. It can at the very least be damaging to an organizations reputation [Richardson, 2013]. Therefore there is a clear risk when legal non-compliance issues occur. Part of managing risk is ensuring that all the operations remain within permitted requirements and no incidents occur that may lead to prosecution, fines, notices and generally legal action.

The above two examples help us understand that the themes are in no way completely independent from one another, however, they have to be studied separately as there are instances of risk management which are not related to legal compliance issues and there are legal drivers other than pure compliance such as performance-based design and self-regulation which are not directly related to risk management but perhaps more to operational excellence and sound and effective operations/EHS management systems.

When the questions for both the surveys and the interviews were developed, they were developed to try to cover key themes and as a start the strategy was to work within the context of some of the anchor references which were used on the basis of their:

- (a) Recent discussion of the latest issues relating to EHS governance and leadership matters and also subjects such as high reliability, risk management and organisational EHS management systems.
- (b) References which were directly addressing the research topic area and the title of the research and which address the research objectives.
- (c) Quality references which were from reputable organizations such as the UK HSE, OECD, IoD and others and/or authors who were known as areas specialists.
- (d) As the research was about the GCC region and to gain as much from more local context, many of the references came also from the largest and most important bi-annual EHS practitioner's conference in the GCC which was the American Society of Safety Engineers – Middle East Chapter Conference proceedings over the past 8 years. This was also completed with information from presentations and papers published in GCC/ME practitioner EHS conferences as well.
- (e) As this is a relatively new subject most of the anchor references were a maximum of 15 years old.

The anchor references against each theme are given in table 3.4 in chapter 3.

4.8.2 - Stage 3 – Pilot Study & Quantitative Study Stage

Using a crude basis by drawing on the pilot study work survey developed in Module 7, the design was enhanced to develop questions against the 9 key themes that evolved from the Literature Review work. Whilst the questions were mostly newly generated, the questions from the 14-question survey developed previously were explored for their applicability in the newer survey. The newer survey ended up with 27 questions from 31 questions. Some of the questions were removed because they were too similar to other questions and some because they were redundant and others because they were too confusing.

The questions were initially developed by the researcher and related to one key theme. However, in the expert panel validation exercise conducted different practitioners (legal specialists, EHS practitioners, general managers, ERM specialist etc.) were asked to comment on each question and advise which themes related to which questions in their view. Given the diversity of the expert panel members, where more than 9 out of the 14 experts who participated (i.e. 60%+) linked to the questions to the themes, these questions were linked to the themes for the purpose of the final survey analysis.

The rationale here was if the expert panel undertaking the survey to help in the validation of the same could see that the question related to more than one theme, they were to note that. They were not told that the questions were developed to address one theme to start with in order to ensure that this did not inhibit their views should they have felt that the questions related to more than one theme strongly enough.

At the pilot study stage the total count of themes against each question was noted and where 9 or more of the expert panel located a theme to a certain question (there were a total of 14 persons who participated from the 16 invited) these were incorporated in the final question matrix. So, eventually there was one question which was linked to more than one theme.

Additional to the above, the respondents (expert panel) were asked about each of the questions (which they were asked to actually answer using the adjusted 7-point Likert scale where central tendency was removed) and what they understood from certain questions to ensure that a more or less common interpretation on each question, thus becoming effectively a 6-point scale. Their comments were noted and this helped further refine the questions before the actual quantitative instrument was finalized. The questions were eventually amended as follows:

- (1) Common terminologies were used. At times safety was used and at times EHS – these were all amended for all the questions to talk about

health and safety. The same went for HSE vs. EHS; senior manager or company leader was replaced with CEO/MD and so on;

- (2) Certain questions were reworded to remove any confusion with what the question was trying to assess. i.e. the English was improved;
- (3) Some questions which were written in a reversed form, i.e. where negatively scored where changed to positive scoring as they seemed to be convoluted and could be confusing for the respondent. An example of this was *"The HSE issues should be discussed in the Audit and Risk Committee of the Board"* initially read "should not be". Some of the panel members asked if the best practice was to or not, when the researcher responded with it should, they said, it is better to just assess if they would agree with best practice rather than not agree with something which contradicts best practice. In saying this some questions remained negatively scored for internal validation reasons.
- (4) In general questions were made shorter where possible to make the respondent pick up on the key issue and respond accordingly.
- (5) Double-barrelled questions were removed based on the discussion and advice of both the expert panel and the supervisor.

It is worthy to note that the survey went through 5 key revision stages; 2 prior to the panel and 3 after the panel/pilot review.

Appendix F contains the survey questionnaire with the results of the pilot study that was developed and employed in the research. It also contains all the Literature Review related themes. **Appendix A** contains the survey questions with the final list of themes.

Quantitative Study Strategy

The main study involved the collection of data using a validated survey of 27 questions relating to 9 key themes (see section 3.7) and using a 7-point Likert scale with a removal of the central tendency (i.e. reduced to a 6-point scale effectively). These questions were now validated using the pilot expert panel.

The concept of data transformation is applied in this case to undertake a reverse scoring. This is sometimes used when several questions are used to measure a single concept (Sekran & Bougie, 2010).

Coding

The respondents were not able to take a neutral stance and had to either partly agree or partly disagree to statements. These surveys were administered at the time of the interview, so respondents took an average of 10-15 minutes to answer the questionnaire prior to starting the semi-structured interview.

The use of closed questions allows for the advantage of pre-coding [Byran and Bell, 2007]. Using a 7-point Likert scale there than a 5 point scale gives a greater insight into the overall level of agreement or disagreement with a particular concept or theme. The scale was maintained in the survey as: 6 = *Strongly agree*; 5 = *Agree*, 4 = *Partly agree*; 3 = *Partly disagree*, 2 = *Disagree*, 1 = *Strongly disagree*. In the survey three important things were done:

- (1) The central tendency where not applicable or neither agree or disagree with a certain statement was removed. This was to ensure that a clearer picture to level the perception on the themes was obtained. Respondents could not have any strong feelings, but they would have to sit on one side of the fence;
- (2) Some questions were reversed and thus a higher level of agreement would mean a lower score rather than a higher score. This was done in order to check for somewhat of an internal validity and that respondents were consistent in their views;
- (3) The questions were mixed in terms of themes. That means that the questions are not clustered in sets which relate to a certain set of themes and also the questions are mixed in terms of positive and reversed (negative). Once again this was done to ensure that more accurate results were obtained.

The survey questionnaire is given in **Appendix B**.

4.8.3 - Stage 4: Qualitative Study

Qualitative Enquiry Strategy

The qualitative enquiry design in this study was extremely important (as discussed earlier) to give the research the depth of understanding and enhance the rich picture required. The narrative structured content analysis strategy with this exploratory research was employed to try to:

- (a) Explore possible reasoning with agreement and disagreement with questions in general terms in the surveys conducted. Thus agreement or disagreement with best practices from the literature were addressed;
- (b) Understand better through dialogue with the respondents why perhaps the degree of agreement or disagreement with certain practices. This is to add depth of understanding of the survey responses. It is worthy to note here that this is not done directly whilst looking at the survey answers at the time but going through spin off questions as described in the next sub-section.
- (c) Investigate through using structured content analysis where the discussion eluded more to certain themes as opposed to others to see which themes those were more prevalent and more important or leading. Create a count of statements to see which themes are oft repeated and if there were any emerging trends in the interviews.
- (d) Using thematic content analysis, investigate through the various statements made and suggestions discussed by the respondents if there were other themes or even subthemes that were emerging. This was likely as the research was being undertaken in a different region of the world to the regions where the best practices guidelines, working documents and research was mostly made with particular reference to the anchor references.

(e) Item (d) above was significant as this is where new possible themes that relate to organizations in this region and also those which the recent literature has not explored in any depth are yet to emerge.

Developing the Semi Structured Interview Protocol

The questions that were developed for the semi-structured interview were related to each of the themes. The Table 4.2 below gives the questions and the rationale for each question.

Table 4.1: Semi-structured Questions and their Rationale

Question	Theme	Rationale	Potential Further Probing/Spin-off questions
What kind of Role do you see if any does the Board of Directors play in providing health and safety leadership in their organization?	Safety Leadership	Explores views and perceptions on BoD safety leadership role. The question also allows the respondent to indicate there is also no or a minimal role should they feel that way.	How important is their role in EHS?
To what extent and how do you see the Board of Directors as company governors can and should engage in EHS development matters in an organization like yours?	Developing a Safety Culture and Communication	Explores views on demonstration of leadership and degree and nature of influence and involvement of the BoD member in EHS organizational matters.	Do they need to engage in EHS matters at all? Does it really add value and if so how?
What kind of accountabilities do you feel you have in comparison with the Board of Directors when it comes to influencing and directing the performance of EHS in your organization?	Influence and Accountability	Explores the contrast of accountabilities between both the BoD and the company management and investigates views on how much should BoD influence and direct for EHS performance.	Do you think these are well understood? Do you see the BoD taking accountability?

Question	Theme	Rationale	Potential Further Probing/Spin-off questions
In what ways are your risk management approaches different to those of the Board of Directors?	Risk Management (RM)	Investigates the RM practices and tries to see if there is a difference in RM practice between both levels to later compare with ERM best practice guidance for literature.	Are EHS risks well understood? Are they reviewed as part of the company RM reviews?
How often, how and why do you update the Board of Directors on the EHS performance of your organization? Do they expect from you periodic updates at all?	Monitoring EHS Performance	Gains understanding of the reporting and monitoring practices and tries to study if this is an institutionalized company practice and if it is borne from voluntary reporting or Director expectations.	What kinds of KPIs are reported? Do you feel there is enough emphasis of proactive and leading performance indicators?
Would you personally agree to have your most senior EHS representative report to anyone other than yourself as the head of the organization? If yes or no why?	Reporting Structure and Hierarchies	Explores if the MD/CEO (senior manager) sees the EHS function and representative as a role which he needs to be personally and directly engaged and to understand better why ?	Is EHS considered a technical function within your organization?
To what extent do the legal requirements for compliance to EHS influence/drive your approach to EHS performance development? Do you think your Board of Directors are driven in a similar way or is it different? If different how is it different?	Legal Imperative for Safety	Investigates how much the legal imperative is a driver to improve and sustain EHS performance in the organization and if the BoD look at compliance in a similar way and to understand better why so or not so.	Has your organizations faced any legal issues relating to EHS? Do you not see that the BoD would see compliance as a key driver to prevent organizational exposure?

Question	Theme	Rationale	Potential Further Probing/Spin-off questions
In what ways and what tools do you use to set an agenda to improve and maintain high standards of EHS in your organization?	Operational Excellence (& EHS Management Systems)	Try to understand how EHS is managed in an organization and how it is used to sustain and improve performance.	Do you have an integrated EHS Management System? Do you have any certified EHS Management Systems.
Do you feel that your current Board Directors have sufficient basic awareness training in EHS and Safety in your industry? If so what kind of knowledge do they have and if not what kind of knowledge do you think they should have?	EHS Knowledge and Competence	Tries to understand perception on knowledge and competence of BoD with regards to EHS within the industry? During the panel pilot discussions various experts said this to be perhaps one issue. Also tries to explore what knowledge it is felt they should have to add value in their roles.	If a training program was to be set up what kind of issues would you think the BoD members should be made aware of? How long should this training or awareness be for?
How do you see in your mind and from your experience will the governance of EHS issues change in the future especially at both the: Executive Management Level? Board Level?	General Question (Personal Opinion about Future Developments)	Tries to see if there is anything in the context of the research topic that can be added from the respondent's point of view and to also understand better from such senior leadership their outlook in this regard in the future.	None identified.
There are three types of Boards: Executive Board – i.e. with a CEO and Chairman Detached – i.e. where the CEO is not part of the Board and all Board	General Question (Board Structure)	The debate about most effective Board structures has intensified in recent years to address which is the most effective system of governance. This question tries to investigate in the context of EHS leadership if it makes a difference what	None Identified.

Question	Theme	Rationale	Potential Further Probing/Spin-off questions
Members are Independent Mixed – i.e. where the CEO and CFO are part of the Board Which Board Type would you say was most effective in governing EHS matters in High Risk/High Reliability Organizations?		Board structure with serve better EHS governance and leadership matters.	

The semi-structured interview protocol was chosen as opposed to open ended questions for the following reasons:

- (1) Whilst the research is quite exploratory it is based on some emerging themes from the literature review and thus the structure of this research is supported by questions which are related to the themes;
- (2) The interview purpose is to investigate the emerging themes which are critical research topics which are used in the analytical framework for analysis;
- (3) The respondents are very busy senior leaders of organizations who have a limited amount of time to spend with the researcher. A semi-structured approach means that better control over the interview timing is achieved whilst ensuring all the critical research topics are covered;
- (4) In the analysis strategy, a structured content analysis is more effectively done based on the results collected from a more structured interview transcript.
- (5) In the analysis and convergence of data with the quantitative survey data, linking the results together through the themes becomes more manageable and logical.

4.8.4 - Stage 5: Data Collection – Communicating and Meeting with Respondents

Arranging Meetings for Survey Data Collection & Interviews

The interviews were arranged directly in most cases and at times through peers from within the researcher's professional network. A package was prepared which included two key documents which were shared with the prospective respondents (prior to arrival), they were:

- (1) **Purpose of the Study** – Standard Introduction letter which was addressed to them personally. This was called the “**Information Sheet**” and contained the name of the researcher; the title of the research topic; the details of the purpose of the research and the kind of data that needed to be collected; reference to the supervisor contact details and the confirmation that information related to persons and companies would be anonymised to protect confidentiality. A copy of a typical Information sheet is given in **Appendix C**.
- (2) **Researcher's Biography** – in one page covering academic, vocational qualifications; research interests; occupational information and professional activities such as involvement in conferences, committees and professional memberships/affiliations. This is attached to **Appendix D**.

Meeting with the Respondents

After the interview date and time was set, upon meeting the respondents (this was generally done in their offices or their meeting rooms on their premises with the exception of two respondents who arranged to meet in a public location over a coffee), three further pieces of information were given to them:

- (1) **Researcher's Business Cards** – both Employer's Business Card with business title and Bradford University Researcher's Business Card with DBA scholar title.
- (2) **Consent Form** - which contained at the bottom of the form and after all questions were completed the respondent and the researcher had to sign-off. The form read at the bottom as follows: *"I give my consent to take part in the research and acknowledge that by signing this form I consent to information discussed to be used in this study and that the information provided will be anonymised"*. A typical form is attached to **Appendix E**
- (3) **The Survey Form** – which they were asked to complete after the introduction and briefing on purpose of the study and prior to the start of the interview. Survey instrument is given in **Appendix B**.

Undertaking the Survey Research

The survey in the form of the completed 27-question questionnaire first and then undertake the interview. We have already discussed the development of the semi-structured questions and how they were theme-based questions. Given the seniority of these respondents and the time they can make available to assist in this research, it was assumed that each interview question should take about 3-7 minutes to answer and therefore the total interview time should not exceed about 45-60 minutes.

Conducting Semi-structured Interviews

Interviews were conducted using the semi-structured questions. Where further clarifications were warranted or where there was interesting responses which could be explored further, the researcher asked some clarification or spin off questions – examples of which were discussed in table 4.2 above.

Recording

Recording interviews can be at times a sensitive issue. The consent form was given, completed and signed off before each interview, regardless if consent was given to record or not.

Recording was undertaken using an electronic recording instrument “*Olympus Digital Voice Recorder – Model WS-331 M*” which does not require the use of external microphones. All recordings were checked after the interview and transferred to an electronic file which was coded to protect the name of the respondent and the organization.

Transcription

The transcription of interviews is a difficult and lengthy process if one is not experienced with the same. There are benefits to self-transcription of the researcher which includes a review whilst transcribing. This however, can also be counterproductive to the speed of transcription. The researcher conducted one full transcription in which it took more than 13 hours work to transcribe a recording of about 35 minutes.

Third party transcription is more effective and required a financial investment. This was done with all the recordings with the same transcriber. The transcriber labelled in red the transcription of any words/sentences which were not understood and marked the recording time. These were reviewed at the stage of transcription cleaning and were finalized.

Structured (thematic) content analysis:

The analysis of the transcripts was undertaken in 6 stages:

- (1) The initial review of the transcript was to listen to the whole conversation once again and also with the purpose of “cleaning” all the transcripts and removing any missing words or correcting any miss-heard words by the transcriber. This was important as some of the

acronyms used in the industry, some technical terms or short names for certain companies which the transcriber may not be aware of may be noted incorrectly.

- (2) Once corrected, the interview transcript was read once again fully;
- (3) In the third reading of the transcript, using 9 different coloured pens the statements relating to different themes were underlined. Some statements where they applied directly to more than one theme were underlined with more than one colour.
- (4) In the fourth reading was undertaken once all the transcripts were completed – to ensure that statements in all of the different transcripts were reviewed in a similar way, i.e. that the statements were labelled in the same way to maintain consistency. Also any emerging themes were noted for the reading of the transcripts. This was done in the fourth reading because all of the transcripts would have been reviewed already 2-3 times by then.
- (5) In the fifth, a count of the number of theme-related statements was undertaken ensuring tally was made against each theme in each transcript. One recount was undertaken to check the numbers against each transcript.
- (6) In the sixth and final reading which was taken at a later stage the transcript statements under each theme identified were analysed to explore what was the potential sub-theme for each of the 9 themes explored.

During the reading of these transcripts, emerging theme-statements were also undertaken and selected statements which was felt highlighted an important aspect of the research were also noted on the transcripts.

A list of emerging aspects was developed and this leads to the development of other emerging themes which are discussed in the results and discussion chapters. It is to be noted that some of the items that may emerge maybe just sub-themes of key themes already established or new emerging themes. An example of one marked up transcript is given in **Appendix I**.

4.8.5 - Stage 6: Analysis of Data

Data Analysis

Data analysis in this MMR was done independently for each method. The analysis is conducted as soon as the data sets have been completely collected. The analyses are then compared to determine:

- (1) Senior leadership perceptions as per the themes established early on in the research in both sets of data;
- (2) Determine if there are any emerging trends in both sets of data;
- (3) Determine if some of the themes are more dominant;
- (4) Comparisons between leadership perceptions between Oil and Gas and non-Oil and Gas industry in both sets of data;
- (5) Determine from the structured content analysis which themes seem to be emerging more than others – are thus more significant/important given that each question was based on one theme. Theoretically speaking if all the questions are answered in similar ways, there should be an equal balance between the statements per theme. If not, that would indicate that some themes are more dominant or important (or even overarching) than others.
- (6) Leveraging on this mixed methods research design compare the quantitative data and qualitative data to see if
 - (a) Any similar trends appear and;
 - (b) The data set may explain the other better to give the analysis greater enhancement.
- (7) From the qualitative data establish the emerging ideas, emerging themes and areas for further enquiry.

Quantitative Data Analysis:

The surveys are collected for all the respondents and the responses are analysed based on the coding. Where positive statements are given scores of 6 for *Strongly Agree*; 5 for *Agree*; 4 for *partly Agree*; 3 for *Partly Disagree*; 2 for *Disagree* and 1 for *Strongly Disagree*. On the other hand the exact

opposite is done with negative statements which contradict best practice the scoring is reversed and thus they are given scores of *1 for Strongly Agree; 2 for Agree; 3 for partly Agree; 4 for Partly Disagree; 5 for Disagree and 6 for Strongly Disagree.*

This means the higher the score out of 6 in each question and each group of questions relating to the coded theme the greater the agreement with best common practice under each theme. The Statistics Software SPSS 20.0 was used to interrogate the data for the purposes of the Quantitative Analysis. The following was undertaken with the data:

General Data Analysis:

- (1) Descriptive statistics is undertaken; validation is undertaken by running the descriptive statistics against each theme. This was undertaken with the two Groups of Data for Oil and Gas Respondents and non-Oil and Gas Respondents.
- (2) A regression was attempted to see if there were any trends emerging;

As the data set was too small with no statistical tests such as t-tests to assess the differences between neither the groups, nor an analysis of variances or correlations and factor analysis was attempted.

Qualitative Data Analysis:

The transcripts of all the interviews are analysed by using a structured thematic content analysis. Statements throughout the transcripts are analysed against the 9 key themes. As explained in the previous section in the fifth and final reading of the transcripts, a count of the number of theme-related statements was undertaken ensuring tally was made against each theme in each transcript. This was done using 9 different colour pens. Each colour defined a certain theme. Some statements where it was felt related to more than one theme were marked with more than one colour. One recount was undertaken to check the numbers against each transcript.

Then the statements were further analysed to explore the sub-themes that emerged under the key 9 themes that were established at the earlier stage of the research.

In addition to this, where emerging themes or strong ideas which are related strongly to the research questions was observed, these statements are also marked separately and a listing was created with the themes. Once all the transcripts are completed the listing is finalized and appropriate grouping of ideas for the list generated is undertaken in order to highlight emerging themes or important ideas which are worthy of further discussion and future further enquiry.

Important statements are marked for incorporation in the discussion. A full Summary of the transcripts is tabulated and given in **Appendix H**.

4.9 Engaged Scholarship: Researcher-Research Relationship

Given that I am a practitioner in this field I need to address this matter of the research and researcher relationship. Being a practitioner and a senior EHS manager is both an advantage and a disadvantage at the same time. The main advantages lie in the greater depth of understanding that I have as a practitioner with working knowledge and experience of EHS matters, organizational dynamics when it comes to EHS and also the first-hand experience with observing over the years of my practice of the impact of senior leadership influence on EHS performance in organizations.

I have also some deeper understanding of the themes that initially emerged from the literature and they are consistent with my experience and make a great deal of sense. This deeper understanding also borne for the establishment of the sub-themes under these themes that initially evolved from the literature review will thus help me in the analysis of the data and hopefully determining greater meaning and appreciating the deeper underpinning reasons for certain discourses with leadership.

The disadvantages lie in the bias that is inevitably introduced from my understanding and view-points on issues that relate to EHS performance in an organizational context and where the role of leadership in either managing or directing EHS is concerned. The only way to overcome this is (a) to be aware of the bias and continue to question my analysis and view-point to see if it can be objectively supported by the data and ensure it does and when there is little or no data to support claims that I clearly establish that this view-point is based on my personal experience which would be fair enough as it is also acquired knowledge and; (b) maintain a reflective account of key stages in the research as the reading, investigation, data collection (including the pilot work), analysis and interaction with the data to understand where.

To this end, I have tried to have some reflective dialogues with fellow seasoned practitioners in order to continue to locate myself in the research and once again ensure that my conclusions are clearly related to either the data and findings or my personal experience and disposition on matters.

Chapter 5 – Quantitative Results & Data Analysis

5.1 General Introduction

As discussed in Chapter 4, a mixed methods approach was carried out to collect data in this study. This was exploratory research and required an in-depth literature review to establish some themes which are then investigated at a later stage using the mixed methods. This was particularly the case as we were investigating aspects relating to three very different spheres or areas of knowledge, governance, EHS and leadership.

In this chapter the themes extracted from the main review of the literature are discussed. Then the results of the pilot study are explored with the discussion on the importance of that study to produce a validated survey which was then tested in the next stage. The survey results are then also presented in various ways with both descriptive statistics and analysis.

The results of the qualitative stage which involved a structured thematic content analysis of the interviews is explored and also the general data including other emerging themes and ideas are also presented and are later discussed more extensively in Chapter 6.

This chapter comes in two key parts, which represent the initial stages of the research process. The first is a relatively short discussion of the Pilot Study results and the validation of the survey using the expert panel. The second is the quantitative results from the survey and due to the sample size of data the analysis has been limited to descriptive statistics. In the third part, a more detailed review of the results of the qualitative interviews is given. In the last part, a short discussion of the results of the two methods is presented. The details of the impact of the results and what they may mean is reserved to Chapter 6, the extensive discussion.

5.2 Pilot Study Results – Validation of Survey and Themes

An initial pilot study was conducted in late 2011. This study used some of the research conducted during the earlier part of my DBA modular studies. Based on the discussions and as explained in Chapter 4, the questions were created following the emerging themes from the Literature Review undertaken (discussed in Chapters 2 and 3).

In table 5.1 below the questions are given along with the themes that emerged from the literature review and the themes that emerged from the pilot study.

Table 5.1: Survey Questions against Literature Review and Expert Panel Themes

Sr. No	Question (Final Form)	Themes (Additional themes suggested by more than 9 respondents* are in Italics and Bold)
1.	The Board of Directors (BoD) needs to accept both formally and publicly their collective role in providing health and safety leadership in their organization.	<ul style="list-style-type: none">• Safety Leadership;• <i>Influence & Accountability</i>
2.	The consultative process and communication of the Health and Safety Policy to all stakeholders is a key role of the BoD and not only the Chief Executive Officer (CEO) or Managing Director (MD).	<ul style="list-style-type: none">• Developing a Safety Culture and Communication;• <i>Safety Leadership</i>
3.	Health & Safety is the full line manager's responsibility and accountability and not in any way the BoD.	<ul style="list-style-type: none">• Safety Leadership;• <i>Legal Imperative for Safety;</i>• <i>Influence and Accountability</i>
4.	The role of the BoD in Health & Safety leadership should be minimal; responsibility should only be with those who have an expertise in Health & Safety.	<ul style="list-style-type: none">• Safety Leadership;• <i>Influence and Accountability;</i>• <i>EHS Knowledge and Competence.</i>
5.	Each Board Member needs to accept their individual role in providing health and safety leadership for their organization	<ul style="list-style-type: none">• Safety Leadership

Sr. No	Question (Final Form)	Themes (Additional themes suggested by more than 9 respondents* are in Italics and Bold)
6.	Each Board Member needs to appreciate that their actions/decisions (where applicable) should reinforce the health and safety policies and statements with no contradiction.	<ul style="list-style-type: none"> • Influence and Accountability
7.	The CEO/MD should reinforce directives given by the BoD even when they may not be aligned with the Health & Safety Policy.	<ul style="list-style-type: none"> • Safety Leadership; • Influence and Accountability; • Risk Management
8.	The BoD needs to ensure that board decisions are aligned where applicable to the health and safety policy statement.	<ul style="list-style-type: none"> • Legal Imperative for Safety; • Developing a Safety Culture and Communication
9.	The CEO/MD must ensure that the Environment, Health and Safety (EHS) Policy and Management Systems of Business Partners are at a similar level of effectiveness as his/her own organization.	<ul style="list-style-type: none"> • Developing a Safety Culture and Communication; • Risk Management; • Operational Excellence & EHS Management Systems
10.	The role of the BoD is to ensure that the CEO/MD demonstrates there are processes to maintain business relationships with other companies, organizations and service providers to ensure they have at least equally as effective EHS policies and management systems.	<ul style="list-style-type: none"> • Monitoring of EHS Performance; • Risk Management
11.	Safety Culture is a sub-set of the Health and Safety Department's work and not the Organizational Working Culture.	<ul style="list-style-type: none"> • Developing a Safety Culture and Communication
12.	I would support the appointment of one of the BoD members as a "safety champion" as the "Health and Safety Director". The champion may be the CEO/MD or even the chairman of the Board, but he or she should be assigned formally.	<ul style="list-style-type: none"> • Developing a Safety Culture and Communication; • Influence and Accountability; • EHS Knowledge and Competence
13.	The CEO/MD must ensure that the internal controls are set-up to ensure legal compliance to regulations, prevention of any EHS incidents and Company EHS performance remains effective.	<ul style="list-style-type: none"> • Monitoring EHS Performance; • Influence and Accountability; • Operational Excellence and EHS Management Systems
14.	The Senior EHS Manager/Director should report directly to the CEO/MD.	<ul style="list-style-type: none"> • Influence and Accountability; • Reporting Structure and Hierarchies

Sr. No	Question (Final Form)	Themes (Additional themes suggested by more than 9 respondents* are in Italics and Bold)
15.	The EHS issues should be discussed in the Audit and Risk Committee of the Board.	<ul style="list-style-type: none"> • Risk Management; • Monitoring EHS Performance; • <i>Operational Excellence and EHS Management Systems</i>
16.	A separate EHSEHS Risk Committee should be set up that focuses only on EHS Risks and Issues at the Executive Committee Level.	<ul style="list-style-type: none"> • Risk Management; • Influence and Accountability; • <i>EHS Knowledge and Competence</i>
17.	EHS Risk Committees should involve executive managers from the company but no Board Directors.	<ul style="list-style-type: none"> • Influence and Accountability; • <i>Risk Management</i>
18.	As EHS issues have very little to do with future growth, EHS risk management should focus only on present risks and those arising from existing assets/operations.	<ul style="list-style-type: none"> • Risk Management; • Legal Imperative for Safety; • <i>Safety Leadership</i>
19.	Executive management is principally accountable for setting an agenda to improve and maintain high standards of EHS and safety.	<ul style="list-style-type: none"> • Safety Leadership; • Operational Excellence and EHS Management Systems; • <i>Influence and Accountability; EHS Knowledge and Competence</i>
20.	Executive management must not combine between the activities of the EHS risk management and the Enterprise Risk Management (ERM) committees.	<ul style="list-style-type: none"> • Risk Management; • Operational Excellence and EHS Management Systems
21.	Enterprise Risk Management (ERM) should be managed at the Board Level and not the Executive Management Level in an Organization.	<ul style="list-style-type: none"> • Influence and Accountability; • Risk Management; • Safety Leadership
22.	Board Directors must receive some formal basic awareness training in EHS and Safety. Training would typically include the obligations and responsibilities of company executive officers, employee rights to safe working environments, legal obligations etc.	<ul style="list-style-type: none"> • EHS Knowledge and Competence

Sr. No	Question (Final Form)	Themes (Additional themes suggested by more than 9 respondents* are in <i>Italics and Bold</i>)
23.	Board Directors must at least once a year review the EHS statistics, incident analysis, improvement programs and other critical information relating to safety culture development and related investments.	<ul style="list-style-type: none"> Monitoring EHS Performance
24.	The BoD should expect that the CEO/MD has a dedicated quarterly meeting with all the senior managers and EHS specialists to review safety and EHS performance of an organization.	<ul style="list-style-type: none"> Influence & Accountability; Monitoring EHS Performance
25.	The Company EHS Policy should be reviewed and endorsed by the Board of Directors before they are signed by the CEO/MD.	<ul style="list-style-type: none"> Influence & Accountability; Safety Leadership
26.	The Board of Directors must push the CEO/MD and their team to apply a zero target for all EHS and Safety Key Performance targets regardless of historical data and performance.	<ul style="list-style-type: none"> Developing a Safety Culture and Communication; Safety Leadership Influence & Accountability
27.	The Board agenda must include EHS performance issues to be discussed, even if briefly at every Board Meeting	<ul style="list-style-type: none"> Safety Leadership; Monitoring EHS Performance

The feedback gathered from the majority of the pilot study respondents was positive with respect to the study overall. Some of the expert panel respondents identified that they saw some merit in the study and in the actual questions. As explained in Chapter 4, some suggested changes in some of the questions and this was undertaken.

5.3 Survey Results – Quantitative Enquiry

Based on the survey feedback, whilst initially a total of 43 respondents were targeted the researcher was able to successfully undertake 30 meetings/surveys with respondents. A total of 30 respondents on the surveys data were collected and 29 interviews were conducted (of which 26 were recorded/transcribed/analysed). Due to the nature of the respondents being

CEOs and senior executives/managers and managing directors it was not an easy task to gain access to everyone.

All 30 survey requests to the executives were returned, providing survey response rate of 100%. Out of the 30 respondents (29 were interviewed); 19 (63.3%) were from the Oil and Gas Industry. The remaining 11 (36.7%) were from non-Oil and Gas industry including shipping, manufacturing, construction and aviation. All those results are included in the analysis.

The questionnaire included 27 variables and was based on the insights gained from the extensive literature review conducted by the researcher together with inputs from the expert panel of specialists. The 27 variables on the questionnaire were grouped and organized under 9 themes including Safety Leadership (meaning EHS Leadership also with 12 questions); Influence and Accountability (14 questions); Safety Culture and Communication (4 questions); Legal Imperatives for Safety/EHS (4 questions); EHS Knowledge and Competence (3 questions); Operational Excellence and Management Systems (8 questions); Monitoring EHS Performance (6 questions); Reporting Structures and Hierarchies (1 question); and Risk Management (7 questions). As explained in section 4.2, the questions related at times to more than one theme.

5.3.1 Reliability Analysis

Reliability of the measurement scale used for the study is very important as it ensures internal consistency. Reliability refers to a condition where a measurement process yields consistent scores over repeated measurements. Researchers use various approaches to ensure reliability and one of the most widely used approaches are the Cronbach Alpha test. This approach also estimates internal consistency of items included in the scale and determines whether the scale has a homogeneous structure or not. The reliability analysis was conducted on the variables in the data set used. The result of the reliability analysis for the overall scale is presented below.

Table 5.2: Cronbach's Alpha test Result

Cronbach's Alpha	N of Items
0.727	27

The Cronbach's Alpha value of 0.727 indicates that there is high reliability and internal consistency in the data gathered and the scale items are homogenous.

5.3.2 General Descriptive Statistics

The general descriptive statistics contain information on the frequencies, the percentage agreement with the statements on the questionnaire, mean and standard deviation provides a quick snapshot of the perceptions of the two groups of respondents (O&G and non-O&G) on the survey statements.

Below in Table 5.3 contains containing the Mean Average; Standard Deviation; Percentage Agreement for the whole Group (i.e. N=30) and for the O&G and Non-O&G Groups (N=21 and N=11 respectively).

Table 5.3: Descriptive Statistics

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
N Valid	30	30	30	30	30	30	30	30	30	30
Mean	5.70	4.97	4.90	5.00	5.10	5.60	4.77	5.50	5.13	4.77
Std. Deviation	.596	1.12	1.29	1.11	.803	.563	1.27	.682	.730	1.00
Oil & Gas N	19	19	19	19	19	19	19	19	19	19
Agree %	21	42	36	42	58	37	37	26	47	47
Strongly Agree %	74	31	31	26	31	58	26	63	26	16
Non Oil & Gas N	11	11	11	11	11	11	11	11	11	11
Agree %	9	27	36	45	54	27	27	36	45	9
Strongly Agree %	81	45	45	54	27	73	54	54	45	45
Agree %	17	37	37	43	57	33	30	30	47	33
Strongly Agree %	77	37	37	37	30	63	37	60	33	27
Agree & Strongly Agree %	94	74	84	80	87	96	67	90	80	60
Total % N = 30										

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Oil & Gas										
Mean	5.68	5.00	4.84	4.68	5.11	5.53	4.47	5.53	5.00	4.68
Std. Deviation	.582	.882	.279	1.25	.875	.612	1.34	.697	.745	.946
Non-Oil and Gas										
Mean	5.73	4.91	5.00	5.55	5.09	5.73	5.27	5.45	5.36	4.91
Std. Deviation	.647	1.51	1.48	.522	.701	.467	1.00	.688	.674	1.13

	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
N Valid	30	30	30	30	30	30	30	30	30	30
Mean	5.30	4.47	5.80	5.40	5.17	4.97	3.10	5.03	5.07	3.97
Std. Deviation	.702	1.16	.407	.855	1.117	1.15	1.44	1.12	1.01	1.40
Oil & Gas N	47	36	36	21	47	42	10	47	37	16
Agree %	36	21	31	60	37	37	26	26	37	37
Strongly Agree %										
Non Oil & Gas N	36	27	18	27	18	45	27	27	36	54
Agree %	54	18	81	63	63	36	63	63	45	18
Strongly Agree %										
Agree %	43	33	20	23	37	43	26	40	37	43
Strongly Agree %	43	20	80	60	47	37	40	40	40	6
Agree %	86	53	100	83	84	80	26	80	77	49
Total %										
N = 30										
Oil & Gas										
Mean	5.21	4.58	5.79	5.32	5.16	4.95	3.00	4.79	4.95	3.53
Std. Deviation	.713	1.17	.419	.946	.834	1.17	1.49	1.18	1.12	1.389
Non-Oil and Gas										
Mean	5.45	4.27	5.82	5.55	5.18	5.00	3.27	5.45	5.27	4.73
Std. Deviation	.688	1.19	.405	.688	1.53	.118	1.42	.934	.786	1.10

	Q21	Q22	Q23	Q24	Q25	Q26	Q27
N Valid	30	30	30	30	30	30	30
Mean	3.63	5.33	5.87	5.77	4.90	5.10	5.57
Std. Deviation	1.56	.606	.346	.504	1.06	.960	.568
Oil & Gas %							
Agree	37	58	16	21	47	37	37
Strongly Agree	5	37	84	79	21	42	58

Non Oil & Gas %							
Agree	27	45	9	9	64	36	36
Strongly Agree	9	45	91	82	36	36	64
Agree	33	53	13	17	53	37	37
Strongly Agree	7	40	87	80	27	40	60
Total %	40	93	100	97	80	77	97
Oil & Gas							
Mean	3.63	5.32	5.84	5.79	4.63	5.11	5.33
Std. Deviation	1.57	.582	.375	.419	1.21	1.04	.612
Non-Oil and Gas							
Mean	3.64	5.36	5.91	5.73	5.36	5.09	5.64
Std. Deviation	1.62	.674	.302	.647	.505	.831	.505

Tables 5.4 and 5.5 show the 4 most agreement question statements and the 4 least agreed with questions respectively.

Table 5.4: Top Four – Agreement Question Statements

All Respondents	Percentage	Themes Related
Q.13 The CEO/MD must ensure that the internal controls are set-up to ensure legal compliance to regulations, prevention of any EHS incidents and Company EHS performance remains effective.	100%	<ul style="list-style-type: none"> • Monitoring EHS Performance; • Influence and Accountability; • Operational Excellence and EHS Management Systems
Q.23 Board Directors must at least once a year review the EHS statistics, incident analysis, improvement programs and other critical information relating to safety culture development and related investments.	100%	<ul style="list-style-type: none"> • Monitoring EHS Performance
Q.24 The BoD should expect that the CEO/MD has a dedicated quarterly meeting with all the senior managers and EHS specialists to review safety and EHS performance of an organization.	97%	<ul style="list-style-type: none"> • Influence & Accountability; • Monitoring EHS Performance
Q.27 The Board agenda must include EHS performance issues to be discussed, even if briefly at every Board Meeting	97%	<ul style="list-style-type: none"> • Safety Leadership; • Monitoring EHS Performance

From table 5.4 it would seem that there is strong agreement if not a near 100% consensus from all respondents on issues that relate to matters that relate strongly to **Monitoring of EHS Performance** and the oversight

matters related to EHS leadership. The questions may be criticized as being possibly “socially desirable behaviour questions”; the reality is that they all ask simple and critical questions relating to best practice and in fact at times to minimum best practice rather than best in class actions.

On the other hand Table 5.5 shows another very interesting finding. Practically less than 50% agree with 4 of the 27 questions. The common denominator between these questions is **Risk Management**. This may just be a reflection even within a relatively small Group of respondents how different organizations and industries manage enterprise (and EHS) risks. Thus, the great difference and disagreement with the questions can be seen here.

Table 5.5: Top Four – Least Agreement Question Statements

All Respondents	Percentage	Themes Related
Q.12 Executive management must not combine between the activities of the EHS risk management and the Enterprise Risk Management (ERM) committees.	53%	<ul style="list-style-type: none"> • Risk Management; • Operational Excellence and EHS Management Systems
Q.17 Enterprise Risk Management (ERM) should be managed at the Board Level and not the Executive Management Level in an Organization.	26%	<ul style="list-style-type: none"> • Influence and Accountability; • Risk Management; • Safety Leadership
Q.20 Executive management must not combine between the activities of the EHS risk management and the Enterprise Risk Management (ERM) committees.	49%	<ul style="list-style-type: none"> • Risk Management; • Operational Excellence and EHS Management Systems
Q.21 Enterprise Risk Management (ERM) should be managed at the Board Level and not the Executive Management Level in an Organization.	40%	<ul style="list-style-type: none"> • Influence and Accountability; • Risk Management; • Safety Leadership

Between the two Groups the biggest differences between the means are observable in **Q4. The role of the BoD in Health & Safety leadership**

should be minimal; responsibility should only be with those who have an expertise in Health & Safety where we had a significantly lower (corrected as this is a reversed question) agreement with best practice with the Oil and Gas Group with a mean of 4.68 (78%) with 68% of respondents agreeing or strongly agreeing, against 5.55 (92.5%) for non-Oil and Gas with 99% of respondents agreeing. This may indicate that in the Oil and Gas sector more executives believe that health and safety should be driven by the specialists. This may reflect the industry realities and will be discussed further in Chapter 6.

Lastly on the descriptive statistics, we see a marked difference between the mean scores in ***Q.20 Executive management must not combine between the activities of the EHS risk management and the Enterprise Risk Management (ERM) committees***. Here the Oil and Gas Group who had a mean of 3.53 (58.8%) with 53% of respondents agreeing or strongly agreeing, against 4.73 (78.8%) for non-Oil and Gas with 72% of respondents agreeing. Again as this is a corrected and thus reversed code-score question, it would seem that there is greater acceptance that at an ERM level there is greater integration of EHS risks into the organizational enterprise risk management system in the Oil and Gas sector's leadership.

The mean score for the 19 question statements out of 27 statements on the questionnaire was approximately 5.00 and the questions statements no. 17, 20 and 21 as discussed above show a markedly lower mean of 3.10, 3.97 and 3.63 respectively which indicates as discussed above a lower agreement. In terms of the Standard deviation (SD) values, across all the statements, there is no significant deviation from the mean as mostly the SD values range from 0.596 to 1.40. There percentage agreement ranges between 80-100% on 18 of the 27 question statements.

5.3.3 Further Quantitative Analysis

Limited by the fact that the population of CEOs and MDs is generally significantly smaller than other types of managers and employees within

organisations this limited the data points which meant that statistically significant analysis would be difficult to rely on within an acceptable level of accuracy to build further on. Therefore the statistical analysis using t-tests, ANOVA, correlations and factor analysis was not undertaken as the data, due to the sample size, would yield statistically unreliable data analysis.

It is for this reason that further exploratory work is required as well. In the next chapter 6, a more in-depth and detailed qualitative review is undertaken.

Chapter 6 – Qualitative Inquiry - Results & Data Analysis

6.1 Introduction:

A total of 29 interviews were conducted in the course of this study. All were recorded except three interviews in which two respondents declined the recording and the recording device for the third respondent failed due to the battery running out. However, with 26 interviews a very good structured thematic content analysis was achieved. In this section four key areas are explored:

- (1) The key differences and similarities between the perception of senior leadership in the O&G organizations as opposed to the non-O&G organizations. This is done through a quantitative analysis of the various transcripts reviewed;
- (2) Establish how senior leadership express their thoughts and ideas both directly and indirectly about the various emerging themes (and sub-themes) from the literature review and through their explanation explore and evaluate their general views on best practice (standards/practices) as given in the literature;
- (3) Establish what the senior leadership see is the future of safety leadership and governance in their industry and the high risk/high reliability organizations;
- (4) Explore and seek to understand the rationale underpinning the senior leadership views on the impact of board structure on EHS performance in high risk high reliability organizations.

Appendix H gives a comprehensive table of the structured content analysis data as collated and a summary table is given below in Table 6.1.

6.2 Overview of the Results

Table 6.1: Summary Table for Facts about Interviews Conducted

Date of First Interview	11 th December 2012
Date of Last Interview	10 th August 2013
Total Number of Interviews conducted	29
Total No of recordings	26
Total number of transcripts	26
Total Recording Time from Interviews (approximate)	936 Minutes (15 Hours and 40 Minutes)
Average Interview Duration (approximate)	36 Minutes
Total No of words analyzed from all transcripts	159,536 words
Average No of words per Transcript	6,136 words
Longest Interview	Interview No. 12 – 1'19"47"
Shortest Interview	Interview No. 4 - 15'02"
Total number of extracted statements relating to Lit Review Emerged 9 Established Themes	2319
Approx. Average number of extracted statements relating to Lit Review 9 Established Themes	86
Highest No of Extracted Statements (Group Average)	18.68% Developing a Safety Culture and Communications
Lowest No. of Extracted Statements (Group Average)	4.13% Reporting Structures and Hierarchies
No. of Additional Statements extracted relating to other potential emerging themes (Total)	95
No. of Additional Statements extracted relating to other potential emerging themes (Average per Interview /Max/Min)	3.5; Max. 8; Min. 0

Figure 6.1 below shows the average distribution of statements for the whole Group put together (i.e. O&G and Non-O&G).

Figure 6.1: Average Percentage of Statements out of the 9 Established Themes (Whole Group of Respondents – Total 26 Transcripts Analysis)

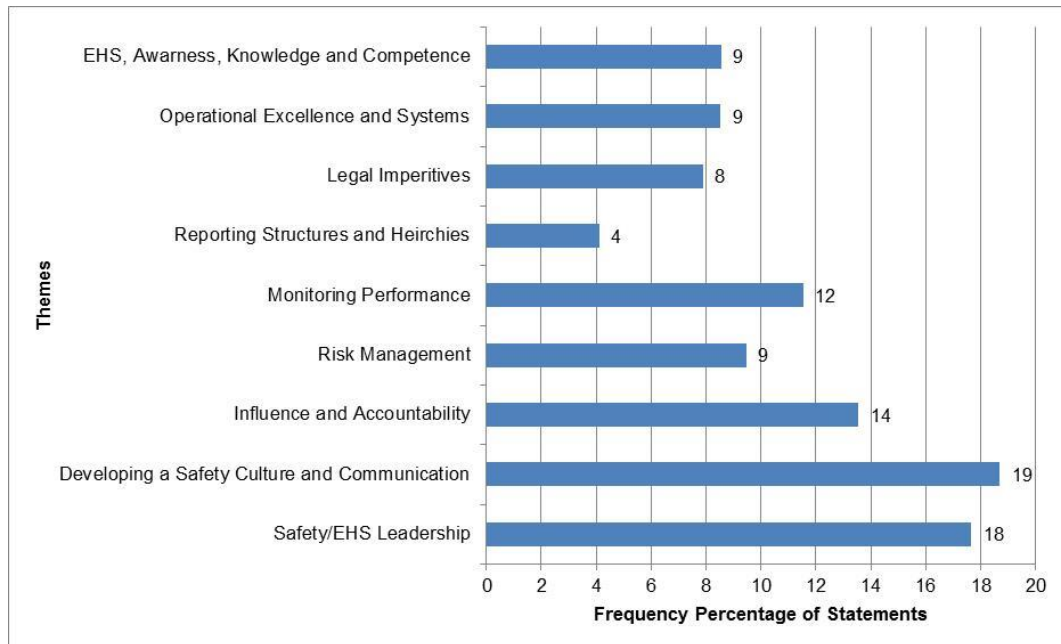
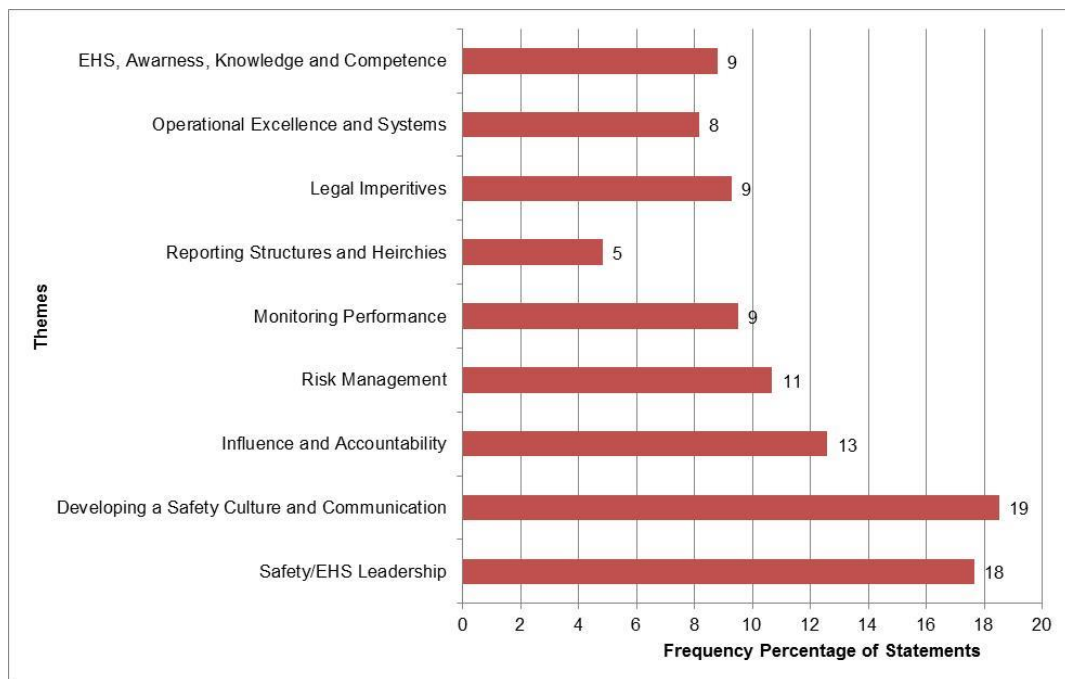


Figure 6.2: Average Percentage of Statements out of the 9 Established Themes (O&G Respondents – Total 17 Transcripts Analysis)



Figure 6.3: Average Percentage of Statements out of the 9 Established Themes (Non-O&G Respondents – Total 9 Transcripts Analysis)



Clearly there is very little difference in the trends we see with the percentage of statements in both groups and the trends seem to be very similar with the exception of differences of nearly 2 percentage points with Risk Management, Monitoring EHS Performance, Influence and Accountability and Legal Imperatives for Safety. The number of statements ranks as follows:

1. Developing a Safety Culture and Communication
2. Safety/EHS Leadership
3. Influence and Accountability
4. Monitoring EHS Performance
5. Risk Management
6. EHS Awareness, Knowledge and Competence
7. Operational Excellence & Systems
8. Legal Imperatives for Safety
9. Reporting Structures and Hierarchies

Overall, the differences we see between the two groups are more statements on Risk Management in the Non-O&G organizations (11% compared to 9%); Monitoring EHS Performance with O&G organizations with more statements (13% as opposed to 10%); Legal imperatives for safety high number of average statements in the non-O&G organizations (9% as opposed to 7% in O&G) and finally Influence and Accountability with more statements from O&G (i.e. 14% against 13%).

6.3 Thematic Analysis – Exploring the Themes emerging from the Literature Review:

In this section, the key themes and the subthemes are determined and further categorised with due reference to the various quotes extracted from the various interviews undertaken. These are tabulated and discussed. The data collected are very rich, supported by numerous quotations from the respondents. In the following sections a representative sample under each theme is reported and discussed.

6.3.1 Developing a Safety (EHS) Culture and Communication

This theme is very significant with most of the leaders interviewed. The lowest percentage of statements relating to this theme upon analysis of the transcripts was in one manufacturing company at around 9.38% and the highest was 25% from an Oil and Gas Storage Company. The average for the whole Group was around 18.68% which is the highest when compared to all other themes.

A total of 8 sub-themes were established through a review of all of the quotes extracted that related to EHS Culture and Communications. These are represented in Figure 6.4.

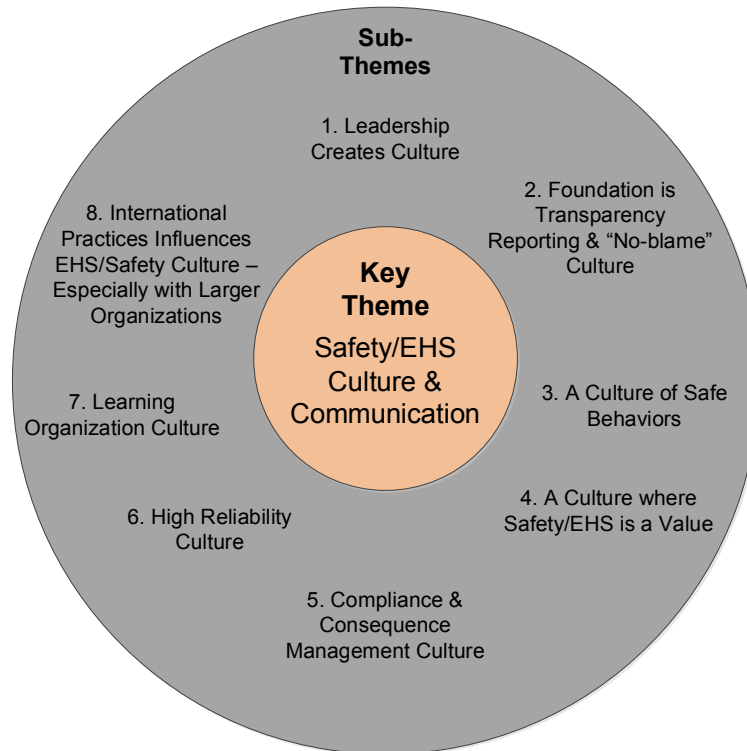


Figure 6.4: Sub-themes of the Key Theme Safety Culture and Communication

6.3.1.1 Leadership Creates a Culture and influences/sets agenda for change:

The first and strongest sub-theme to emerge from the data analysis was that leadership creates and influences the effective development of a safety/EHS culture and communication. Some companies already have a flourishing safety/EHS culture, while others are still exploring how to develop one.

Table 6.2 is a representative collection of some of the quotes extracted from the interview transcripts relating to this sub-theme.

Table 6.2: Sub-Theme - Leadership Creates a Culture and influences/sets agenda for change

Representative Data	Reference
"...I can talk about my Board. EHS isn't high of their agenda...yet. We're trying as an organization to get a more EHS aware, especially from process safety"	Respondent 5, O&G Downstream; Page 4
".....20 years ago we wouldn't be having this discussion, because the only discussion we will be having is on financial performance and shareholder value. Everybody's maturing down this path!"	Respondent 5; O&G Downstream Page 8
"It's kind of like, it's the first thing that we would talk about as I mentioned to you before in any of our meetings and as part of our business conduct is to be a safe partner in communities where we operate and in business that we conduct"	Respondent 6: O&G Refining page 4
"They should be directing, what I see they should be directing managers or senior manager towards leadership and enforcing that to be as apart of the culture in their organization. So they need to be..."	Respondent 2, O&G Downstream Page 1
"First EHS is there, the first thing you look at is the safety of your people. And that's why that's the most important part to start with and then yes the other issues and the legal compliances must be there." (Page 4).	Respondent 2, O&G Downstream Page 4
"So I think that they have to give direction to the executive powers within the company. That they have to integrate safety culture as part of the overall corporate culture. I have seen it that they play a very pivotal and strategic role when it comes to this sort of integration. So that's basically see uh, they must ensure that the management of the company integrate overall business, ethics and culture and the way we do business and safety agro comes in with their guidance."	Respondent 3, O&G Downstream Page 1
"It all improves the safety of the HSE culture of an organisation. It starts, it starts its bottom up and top down and if HSE has not been discussed at top level, at a top level meeting you don't have to talk about details, you know you don't have to talk about details. But in general you have to make sure that it's being discussed there."	Respondent 28, O&G Downstream page 4
"at the Board level any meeting will not start then unless the subject is on EHS then you have to start with a SHEQ moment"	Respondent 8, O&G Refining page 2

<p>"I mean one thing we have is the, like I said the trickle down culture. Um... we, everyone in our management. We always focus on safety first, whenever we discuss, we go visit a site, whenever we have meetings; we always start off with a safety. And we always end by reminding everybody of the safety. So there's a trickle down culture from the top down, where we keep stressing to everyone that this is a key part of our business."</p>	<p>Respondent 10, Heavy Manufacturing, Page 16</p>
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Some leaders recognized that they were at an early stage in their journey with their BoD include Respondent 5 from the Oil and Gas industry, who said:

"...I can talk about my Board. EHS isn't high of their agenda...yet. We're trying as an organization to get a more EHS aware, especially from process safety" (Page 4).

But he later observed that there is now no alternative to developing an EHS culture: *".....20 years ago we wouldn't be having this discussion, because the only discussion we will be having is on financial performance and shareholder value. Everybody's maturing down this path!" (Page 8).*

On the other hand, another respondent from the same industry indicates that such a culture is quite engrained in their management and leadership practice:

"It's kind of like, it's the first thing that we would talk about as I mentioned to you before in any of our meetings and as part of our business conduct is to be a safe partner in communities where we operate and in business that we conduct" [Respondent 6: page 4].

This shows that even within the same industry there are different levels of maturity within the leadership team practices in different organisations, perhaps due to matters related to their relationship with other organisations, international operations and/or partners and stakeholders.

On the very role of leadership in creating or otherwise influencing the development of a safety/EHS culture, some respondents, when asked directly about the role of the BoD report that they play a role in directing

managers to make EHS very much part of the culture of an organisation. An example is Respondent 2 in table 6.2.

Another leader from the oil and gas sector notes that the integration of safety as part of the overall company culture is very critical and that the leadership plays that vital role:

“So I think that they have to give direction to the executive powers within the company. That they have to integrate safety culture as part of the overall corporate culture. I have seen it that they play a very pivotal and strategic role when it comes to this sort of integration.” [Respondent 3: Page 1]

Respondent 28 when probed on the issue of improving safety/EHS culture and the role of leadership responds that whilst the details are not discussed at the top the EHS matters need to be both a bottom up and top down approach.

Here he makes reference to EHS matters being discussed at the top level of boards. But of those which have developed a safety/EHS culture, some thought it necessary that it start from the top. For example, in the oil and gas refining industry, Respondent 8 said that in his company:

“at the Board level any meeting will not start then unless the subject is on EHS then you have to start with a SHEQ moment” [Respondent 8: Page 2]

Note here that a SHEQ moment is a Safety, Health, Environment and Quality Moment which is a short 5 minutes briefing which all meetings in some organizations start with as part of the safety/EHS culture of that organization.

A trickledown effect is described by one of the respondents, reinforcing the idea that the change in safety and EHS culture comes from the top of an organisations:

“So there’s a trickle down culture from the top down, where we keep stressing to everyone that this is a key part of our business.” [Respondent 10, Page 16].

But it is the experience of these senior executives that, as Respondent 8 observed, the culture had to be ‘at every level’ of the organization.

“.....It’s almost on-going eh. Either by e-mail, by posters, on the company web-site er....meeting starts with HSE safety moment er so it’s, it’s just, its being drawn to be part of the day to day business”. [Respondent 8, Page 5].

The importance of participation in EHS events with the employees and workers helps shape the culture within an organisation. Some respondents explained that the involvement of senior leadership was critical to driving the change by participating actively in events and presenting with these EHS promotional activities. This was the opportunity for management to be part of making EHS issues very much alive and to demonstrate to the workforce that it is one of these important things they don’t only monitor and take interest in, but lead and personally engage with.

“So, we conduct 4 times, safety gathering days, in each day in one place. And myself I attend these gatherings also, its gathering that having the employees of the company and the contractor’s employees. So it’s a, it’s a one family together in that day. And we address each element a lot, so we address health, we address safety, we address security, we address environment. And each one has got its own session, questionnaires, speeches and er...I’m also making sure that I am present in each event myself. And I will say my talk, maybe I take only 1 or 2 minutes per topic, for health and safety and so on. But also we speak it into several languages. We speak it Arabic, English, Malayalam, Tamil, Hindi to make sure that the message reaches to the er the lowest position in the contractors and the company.” [Respondent 20, page 7].

6.3.1.2 Reporting, Transparency and “No-Blame” Culture

The need to avoid blaming individuals for accidents drives this company’s policy of embedding safety throughout its day-to-day activities. But in maturing organisational EHS cultures it is noted that reporting, transparency and creating a “no-blame culture” are the foundations of a good and healthy culture.

Table 6.3: Sub-Theme - Changing the behaviours is key to changing the EHS culture

Representative Data	Reference
“So I think one thing you do, is you have the good foundations laid. So you have excellent reporting, you have good communication, you have processes in place to manage safety and that’s a broad statement and there’s a lot to that and having all the procedures, the rules, expectations and all that stuff. People there to supervise when you’re having structure work, every kind of work that’s being done is supervised where people are competent, permanent work systems, you know this whole infrastructure, where you can say, boy you can, you go home in the day and you say, you know I have done really everything possible within my power to ensure that you know we’ve minimised the chance of accidents.”	Respondent 9, O&G Upstream Page 7
“So I educate them and explain it to them. When an incident happens we have the one, one, one rule. One day is where we announce that to all concerned, all company employees that an incident has occurred. Then in one week we issue a preliminary report, and then in one month we issue a full investigation report. So, they understand the sequence and as again part of education.”	Respondent 8, O&G Refining, page 7
“Whatever we have you know, whatever...so we get good record, good achievements when we receive an award for safety. But if anything happens, you know, no one going to be blame no one. So that’s why we are very careful that we have to do whatever we do, follow up, train, awareness and continuous meetings and so on, just to avoid whatever, what can, could happen.”	Respondent 19, O&G Upstream, page 8
“.....you know, lots of people tend not to be able to cope with communicating bad news upwards and the difficulty is that you know if I’m sitting there being told, now everything’s fine and I have a green, green risk register in front of me, some people are very comfortable and say fine.....”	Respondent 12, Aviation, Page 6
“now it’s unfortunate that most, most organizations are driven by a reactionary motivator” and “....HSE is, is the first topic of discussion and usually the last topic of discussion in any Board meeting”	Respondent 22, Oil and Gas Upstream, Page 2

This is illustrated in Respondent 9's quote in the table above. Building a strong culture requires good foundations with excellent communications and open reporting and strong systems and processes in place. Competent people are needed to work and supervise working within those open systems.

Where it is clear that incidents are opportunities for learning and sharing that learning in order to avoid reoccurrences, this requires a mature organisational culture where the negative stigma associated to incidents is replaced with a structured and disciplined approach where the incident is communicated and the process of learning is undertaken. This is described well in Respondent 8's quote given in table 6.3.

The concept of "no blame" culture is one which industry has struggled with as discussed in the literature review.

"But if anything happens, you know, no one going to be blame no one. So that's why we are very careful that we have to do whatever we do, follow up, train, awareness and continuous meetings and so on, just to avoid whatever, what can, could happen." (Respondent 19, page 8).

But some respondents were acutely aware that individual psychologies could hinder the development of a safety culture. This involves difficulties people experience in communicating or receiving bad news. Compare Respondent 12, from the Aviation industry:

".....you know, lots of people tend not to be able to cope with communicating bad news upwards and the difficulty is that you know if I'm sitting there being told, now everything's fine....." [Respondent 12, Aviation, Page 6].

With Respondent 22, from Oil and Gas Upstream, who observed:

"now it's unfortunate that most, most organizations are driven by a reactionary motivator" and "...HSE is, is the first topic of discussion and usually the last topic of discussion in any Board meeting" [Respondent 22, Oil and Gas Upstream, Page 2].

That is, there are reasons for the inability to give or receive bad news, and this includes the profit motive, which may be the reason why people are reluctant to discuss or to hear about EHS issues.

The need to avoid being blamed for accidents drives his company's EHS culture. A balance is definitely required between holding people accountable for their actions, transparency but if this is in the context of a just culture and organisations where the rules and expectation for safe behaviours are clear, a "no-blame" culture can be created in which effective learning from accidents and incidents would be more readily facilitated.

6.3.1.3 Changing the behaviours is key to changing the EHS culture

Changing behaviours of employees and contractors is a challenging task. It takes time to change a culture within an organisation, and this should be appreciated. Many of the leaders interviewed appreciated that changing behaviours was critical to making that overall cultural change within the organisation. Some of these extracts are given in table 6.4.

Table 6.4: Sub-Theme - Changing the behaviours is key to changing the EHS culture

Representative Data	Reference
<p>"Another program that we run is a behaviour based safety system and we were the second company in our industry to start using this. Our HSE manager at the time and I, were trying to figure out, how do we change behaviour. How do we change behaviour, well first, you measure it. So we started measuring behaviour and we gave, we come up with 10 simple rules. These are our rules, we will never break these rules. And, they were very simple, don't stand under a suspended load, don't slide downstairs, very simple stuff. And, then we started to measure this, every day. A number of supervisors would just be observing and they'd mark down good behaviour, bad behaviour. So, we'd get a behaviour based score for the crew and then the 3 crews on the rig and then the whole rig. And, this was just another way to try to understand behaviour</p>	<p>Respondent 22, O&G Upstream page 9</p>

and measure it. If you can't measure it, you can't manage it."	
"They should, they must show their commitment towards, towards safety and it must be of course embedded in their, in their hearts that safety is a, is a very important ingredient or integral, integral parts of their, their work. And they cannot work without looking into safety. Again they look into er building up the culture of safety er they move into consultative approach to the employees convincing skills to convince that everybody must abide to safety. And again if requires disciplinary issues, actions, it has to be taken er but leaving things open and loose ends, safety is...safety is something that people are having difficulties to go with because the nature of human being, they like to er cut corners in order to achieve their goals and safety is the last thing they think about. So really it's very important that er...we need to be always vigilant on the safety side. So have rules and regulations, implement them."	Respondent 20, Power & Utilities, page 5
"That then leads to some behavioural introduction in a way, where you start to get people engaged more in behavioural safety. So in our journey, we're in the foothills of behavioural safety. A lot of front line staff are starting to go and do simple things like safe and unsafe behaviours auditing which they didn't do 2 years ago but now they're starting to do it. And they're starting to get use to people asking them questions about, well you know, what job are you doing and how can it go wrong and how can you get hurt. Um and its early, early days, I wouldn't say we've got quite yet to brother's keeper. Where if 2 guys are working in the front line and one of them forgotten to put his hat on, will the other guy say, oop you're not coming out with me until you've put your hat on and oop you're not touching that machine until you've switched it off."	Respondent 15, Shipping, page 5
"We focused for decades on personal safety, and we're getting pretty good in personal safety in providing the necessary procedures, hardware, whatever. And what's come up in the last few years is process safety; we're realizing that unless we get process safety under control we could have a serious personal incident"	Respondent 5, O&G Refining, Page 3

Respondent 26 from the upstream oil and gas business explains that the change must be gradual and explains that the program cannot be a sudden change that will create a "big shock" as he describes it. He goes on to explain

that a sustained effort moving forward and injecting initiatives such as behavioural based safety programs are required.

This view is further supported by an upstream oil and gas business leader who explains that their behaviour based safety program is fundamentally created a foundation of 10 simple rules which they call the golden rules. He adds that by creating these 10 rules, it is then easy through observation to measure compliance and adherence and thus manage behaviour and safety/EHS performance. He reinforces this widely accepted view that:

“If you can’t measure it, you can’t manage it.” [Respondent 22, page 9]

Even in the Power and Utilities industry the need for behavioural change programmes to create the safety and EHS culture is greatly appreciated. Changing the hearts of people to see safety and EHS as a very important personnel value as it is otherwise natural for them is explained by respondent 20:

“Again they look into er building up the culture of safety er they move into consultative approach to the employees convincing skills to convince that everybody must abide to safety. And again if requires disciplinary issues, actions, it has to be taken er but leaving things open and loose ends, safety is...safety is something that people are having difficulties to go with because the nature of human being, they like to er cut corners in order to achieve their goals and safety is the last thing they think about..” [Respondent 20, page 5].

Respondent 15, from the Maritime and Shipping industry also talks about behavioural change to engage people in safety and describes it like others as a journey. He describes the change that has been brought about by formalised auditing, awareness and persons taking personal responsibility for safety which is changing cultures but yet recognising that it is a long journey.

“That then leads to some behavioural introduction in a way, where you start to get people engaged more in behavioural safety. So in our journey, we’re in the foothills of behavioural safety”. [Respondent 15, page 5]

On the other hand there is also some feeling that the focus on personal safety has been overdone in a way and a call to return to process safety management which is more focused on engineering controls, mechanistic systems and standard operating procedures and safety integrity studies is required to create a safe working culture as well. This is illustrated by respondent 5 from the refining industry.

"We focused for decades on personal safety, and we're getting pretty good in personal safety in providing the necessary procedures, hardware, whatever. And what's come up in the last few years is process safety; we're realizing that unless we get process safety under control we could have a serious personal incident"
[Respondent 5, O&G Refining, Page 3]

Again, the key result area is well articulated in this last quote by respondent 1, which suggests ultimately people must be motivated to operate safely to create the safety culture.

"...EHS you know I suppose we are working on the culture....the software...I think that more important (i.e. than having certified systems)....You know they are a part of improving the safety culture...about buying you know people being safe because they want to be safe not because we told that you, you have to be. That I think needs work." [Respondent 1, Oil and Gas, Oil Storage, Page 13].

6.3.1.4 General EHS Culture where EHS is a Value

Those who regard EHS as arising out of a moral imperative connect EHS with CSR and are very much consistent with the IOSH CSR guide to practitioners identify 5 main types of stakeholder including (1) *Customers*; (2) *Employees*; (3) *Suppliers and Contractors*; (4) *Shareholders* and (5) *Society at large* [Asbury and Ball, 2009].

However, EHS Culture means that culture where EHS is a value. Table 6.5 lists some examples of extracts of statements from the interviews conducted that relate to this.

Table 6.5: Sub-Theme - General EHS Culture where EHS is a Value

Representative Data	Reference
“....if you are the Manager of people, safety is about people whether they are customers, staff, whatever!”	Respondent 12, Aviation, Page 4
“....and that the EHS culture that we strive to achieve within the organization is very correctly understood by them (i.e. the Board), communicated to all external agencies because that is the role of the Board”.	Respondent 8, O&G Refining Page 1
“....and our culture is so well developed and progressed in all aspects of EHS and its so prolific that the people understand it's the core components of their job”	Respondent 6, O&G, Oil Major, Page 14
“....and it must be of course embedded in their, hearts that safety is a, is a very important ingredient or integral, integral parts of their, their work. And that they cannot work without looking into safety”	Respondent 20, Power and Utilities, Page 2
“Another program that we run is a behaviour based safety system and we were the second company in our industry to start using this. Our HSE manager at the time and I, were trying to figure out, how we change behaviour. How do we change behaviour, well first, you measure it. So we started measuring behaviour and we gave, we come up with 10 simple rules. These are our rules; we will never break these rules. And, they were very simple, don't stand under a suspended load, don't slide downstairs, very simple stuff. And, then we started to measure this, every day. A number of supervisors would just be observing and they'd mark down good behaviour, bad behaviour. So, we'd get a behaviour based score for the crew and then the 3 crews on the rig and then the whole rig. And, this was just another way to try to understand behaviour and measure it. If you can't measure it, you can't manage it.”	Respondent 22, O&G Upstream, Page 9
“Safety is a culture you know, if you don't have EHS culture within the company it doesn't work. And how the culture will come? The culture will come from 2 things, people's beliefs, how do their behaviour, sorry, not belief and behaviour (laughs) and the	Respondent 19, O&G, Upstream, Page 16

Representative Data	Reference
regulation. You have the right standard regulation and you have people which respect the standard regulation and it's mixed together and this is the culture we'll build. And what we can they see, they see the leader so here the leadership is important. Er...they will see their management and their leader."	

This Aviation industry leader sees safety culture as arising from one's obligations to other people, and said:

".....if you are the Manager of people, safety is about people whether they are customers, staff, whatever!" [Respondent 12, Aviation, Page 4].

And here stakeholder communication is very important and demonstrated in the quote by Respondent 8. In fact this is seen as a role of the Board to communicate the culture of an organisation.

"....and that the EHS culture that we strive to achieve within the organization is very correctly understood by them (i.e. the Board), communicated to all external agencies because that is the role of the Board". [Respondent 8, O&G, Refining Page 1].

Another leader talks about a more inoculated culture within the organisation and one where EHS a core component of their every job which drives EHS as being a core value rather than just a responsibility and accountability.

"....and our culture is so well developed and progressed in all aspects of EHS and its so prolific that the people understand it's the core components of their job" [Respondent 6, O&G, Oil Major, Page 14].

This is also echoed by another leader from a different industry, the Power and Utilities when he says:

".....and it must be of course embedded in their, hearts that safety is a, is a very important ingredient or integral, integral parts of their, their work. And that they

cannot work without looking into safety” [Respondent 20, Power and Utilities, Page 2].

The development of behavioural based safety programs in organisations has been something that many industries starting adopting in the past 10-15 years. They saw that whilst systems, procedures and policies defined practices, the behaviours of employees and contractors defined performance at the end of the day. This also helped make serious changes in the culture within organisations as described by Respondent 22 in table 6.5.

To this end this particular next quote is from a CEO who won an international safety leadership award in 2012 explains very simply:

“Safety is a culture you know, if you don’t have EHS culture within the company it doesn’t work. And how the culture will come? The culture will come from 2 things, people’s beliefs, how do their behaviour, sorry, not belief and behaviour (laughs) and the regulation. You have the right standard regulation and you have people which respect the standard regulation and it’s mixed together and this is the culture we’ll build.” [Respondent 19, O&G, Upstream, Page 16].

So the above examples (and there are many others) demonstrate that within a range of industries an appreciation of the culture of safety strongly exists. This strength of feeling emerged both explicitly and implicitly in many of the items of discussion during the interviews. Finally, the below quote also demonstrates the importance of stakeholder involvement to drive an EHS culture.

“....there’s aspects of safety there’s aspects of trust, integrity and a lot of high level values which all employees should be aware of and we should embody in our behaviours. So that’s the kind of the covenant if you like that all employees should have to act with versus stakeholders to employees with business partners, suppliers to really make sure that we are acting in the right way”.[Respondent 6, O&G Refining, page 2].

6.3.1.5 Compliance & Consequence Management:

Creating and sustaining an EHS Culture means that culture where EHS is a value that must be respected. In organisational cultures the people within the culture commit and thus adhere to a set of established values. Therefore it is also difficult to manage and sustain an effective EHS culture without any consequence management. Table 6.6 lists some examples of extracts of statements from the interviews conducted that relate to compliance and consequence management.

Table 6.6: Sub-Theme - Compliance & Consequence Management

Representative Data	Reference
"You know fundamentally we believe we do not want to operate where people are not complying. And so you just have to have that commitment and they didn't do this by, let's do some calculations on budgets and rates of returns. It's like no, we will not fundamentally, it's our believe system is a philosophy judgment rather than a business judgment."	Respondent 9, O&G Upstream Page 7
"So whoever we're talking to whether it's the press or it's the board, number one on our agenda should always be, are we living up to our policy? Are we living up to our commitment? I think that's a testament to the strength of our EHS culture at a management level or a senior management level".	Respondent 5, O&G Refining, Page 7
".....so we put in this program called Life Protection Rules where you look through the past history and say people died because they violated these rules, ok, these specific rules and so and its actually not a...and so therefore, you know there's hundreds of rules out there, ok. But, if you comply with these nine rules and then, our people in the past complied with these nine rules, no one would have been killed. That's a very powerful statement and so we have symbols for each of these roles, we have a video, we have really you know engaging animation for each of these roles. So they, you can cascade these out in every different language but you know something that, you know it really has an impression. It's like, these rules will save your life, make sure you always follow these rules ok. And that kind of, brings those rules up to	Respondent 9, O&G Upstream, page 8

Representative Data	Reference
a higher level of attention and engages people with mind ok, you know.”	
“You can almost say that you need a procedure for breathing but (ha ha ha) But if you’re digging a trench of a meter deep...I know it sounds to be a bit too much but basically that’s, that’s also requiring a method statement because it may also have a potential for somebody not seeing it and falling into it and breaking a leg or something like that. But every activity will have a method of statement, how you will be doing it, how you protect that, that activity er from causing an event, what measures will be done. And ensuring that, that is communicated and understood by the, by the, by the staff who will be doing that particular activity. And out will be also er...walking around showing the visibility, questioning the staff whether they really understand and they believe the risks associated with the activities they are actually doing and rewarding them where you feel that they are er...they are doing it not because it’s really a requirement but because they believe it.”	Respondent 14, Construction, page 8

Whilst some respondents cited various reasons for having a safety/EHS culture which included pragmatic ones, such as avoiding prosecutions, but also more ethical ones. However, as explained by respondent 9:

“You know fundamentally we believe we do not want to operate where people are not complying., it’s our believe system is a philosophy judgment rather than a business judgment.” [Respondent 9, Page 7].

And then proceeds to further explain that:

“....So this is your license to save the company, if you don’t want to follow these rules, we don’t want you working here. So, you have the first warning and you get a formal warning letter. You have the second warning and after the third one you’re fired. And so, it’s a very clear expectation so, there’s a three strikes and you’re out.” [Respondent 9, Page 6].

The above statement highlights the ethical nature of EHS governance, which is described as a non-business judgement. However, respondent 5 promotes

a concept of setting a standard based on the policy and asking if the leadership and the organisation are living up to it.

“So whoever we’re talking to whether it’s the press or it’s the board, number one on our agenda should always be, are we living up to our policy? Are we living up to our commitment? I think that’s a testament to the strength of our EHS culture at a management level or a senior management level”. [Respondent 5, Page 7]

Going back to statement from Respondent 9 (page 8) from table 6.6; he explains that laying good foundations is very important and promotes the concept of reporting, communication and effective management processes. He also details in the same interview a formalised program – with rules that have been developed based on the historical trends in violations. Some significant analysis was undertaken by this organisation where they focused on the top 9 rules that prevent almost all major incidents. Whilst the role of learning organisations is discussed later in this very section, this is a very good example where learning from previous incidents has been analysed and information fed-back to create a safer system of work.

In the construction industry, the prescriptive nature of work systems is more pronounced as respondent 14 (page 8), table 6.6 explains. He establishes the critical importance of the use of method statements as an effective communication tool. He places emphasis also on the role of senior leadership being quite visible, asking questions about risks and getting and giving feedback as well as reward. It is quite significant for workers and operating staff to see senior leadership taking interest in their work, performance and their health, safety and wellbeing.

There are a number of matters that this leader addresses in the above discussion which includes compliance, systems of work but also the kind of follow up and visible leadership required to create the very safety and EHS culture that are being developed.

6.3.1.6 Moving from High Risk to High Reliability Organisational EHS cultures

The organisations covered in this research are inherently risky operational companies and operating in high risk environments. However, one of the key drivers to developing a sound EHS culture and having the right kind of communication to avoid incidents and crisis is through an organisational drive from moving towards higher reliability. Table 6.7 below presents a few quotes to demonstrate this.

Table 6.7: Sub-Theme - Moving from High Risk to High Reliability organizational EHS cultures

Representative Data	Reference
"I mean if we were selling fruit and vegetables in the street, the board would probably not take such an interest but when you get into the high hazard industry, by definition, one major incident could take the whole company under, depending on how it's dealt with. And the sort of problem I've seen organisations struggle with is how do you cope with both ends of the spectrum. You've got the high frequency low impact events, you know, what's our loss time injury, slips, trips, falls, driving safety. You've got all of that at one end of the spectrum. At the other end of the spectrum you've got the once every thirty years, major disaster, 50 people killed. And how does the board, you know some of the lessons BP learnt, well they were very, very good at slips, trips and falls, containment spills, loss time injuries. And then they had Texas city, on the back of piper alpha wasn't theirs but it was the offshore version of piper alpha and they realised they were completely blindsided to the low frequency high impact events. They had no controls at any of the board meetings. It's no good looking at the loss time injury rate to say is any of our refineries gonna blow up somewhere in the world. Um so I think, you know the board has to be the accountable body for starting everything going and too many times in history people have said, oh that's the role of the safety department. But it can't be and the more high hazard the industry or the more, you know in our case, 28% of the GDP of the country you know.	Respondent 12, Aviation, pages 1-2

Representative Data	Reference
<p>“It is, it is changing all the time, it is changing all the time. It’s getting better I think all the time er...at all levels to be honest. Ya’ani, we started with this business where HSE was more than a policing function and then the, now it is, it has evolved and developed and...and I strongly believe it comes from the top, whether ya’ani, but where we consider the top this is another. The top basically I think the second in management of the company. They have to show a genuine interest in HSE er...they have to have a full understanding of HSE impact on the business to start with. In today’s world you know, we live in a small world because of er the technological advances in communication er... Reputation is extremely important er... Companies in our kind of industries, oil and gas, you know this is again a small world, it’s not...they live by their reputation. You can easily get out of business, run out of business if your HSE record is bad. Ok. And even as from we are contractors, we are not really oil Production Company but because we are in the oil and gas business we work in very sensitive areas. And nobody will let you get in an oil field to do work for them if they know your safety record is bad. You can cause them a disaster that will ultimately shut them down or cause them to lose billions of dollars. We are in this kind of industry where tolerance for low HSE standard is you know is not there”</p>	<p>Respondent 13, Construction, page 7</p>
<p>“People development and, and you know, it’s about core values, it is about core values. So, if, if the elected leadership, it doesn’t, it can only be 1 or 2, but if they play their role, see safety as a core value, and that, and what that means, coz it’s easy to say safety first, they all do it, you can see stickers all over the place. But, it’s basically saying, you ask your organisation and until everyone gives you the same answer, you know, you haven’t communicated well and they don’t believe you. So, is safety, production, costs or reserves or something else, more important? If you ask me, I’ll tell you, if you ask my deputy, he should tell you the same answer. If you ask managers sometimes you get different answers. Why? Because he’s under pressure and he’s told, now fix that and get that production on stream and you know, don’t worry about your helmet and don’t worry about this or that. Now, you got to deal with it right at the core, so, and</p>	<p>Respondent, 24, O&G Upstream, page 19</p>

Representative Data	Reference
<p>that's a core value, becomes a core value. We have 3 statements of principles, key principles, 3 core values. One, is the general statement principles, how we work, ethically, fairly um we have, the in country value, how we focus on developing and delivering value to the country. Every tender board looks at, could we supply that locally, or can we develop that or can we, it's not about discouraging international investors, in fact it's a better track team, but how do we make it more sustainable. And, the third element is about safety, it's a core value. If you get safety right, which is about leadership, ownership and efficiency of execution, if you get those 3 principles right and of course, by compliance with the rules, you'll get your production right, you'll get your business efficiency right, you'll get everything else right."</p>	

Respondent 12 illustrates this issue of high reliability to meet high risk challenges effectively. He addresses the issue from a business continuity issue where he cites that having one major incident can have devastating impact on the business. He articulates well the balance between the high frequency low impact events and the low frequency catastrophic events. He describes from previous incidents in another industry such as Oil and Gas have had a lasting damage impact on the whole company and industry and how the lack of Board leadership was now in hindsight clear.

"Um so I think, you know the board has to be the accountable body for starting everything going and too many times in history people have said, oh that's the role of the safety department.[Respondent 12, pages 1-2]

Whereas, this respondent 13 (page 7), table 6.7 from the oil and gas sector, explains that the development of higher reliability systems comes through a stronger compliance function which is empowered and overseen by the top management. He positively remarks on the strong belief, interest borne as he sees it from a greater appreciation of the risks and impacts. He goes on to explain the impact on reputation and because the oil and gas industry is so integrated, even partners and contractors are scrutinised as their lack of

performance in safety can have devastating impacts on their principles and clients. He ends his quote with:

“.....You can cause them a disaster that will ultimately shut them down or cause them to lose billions of dollars. We are in this kind of industry where tolerance for low HSE standard is you know is not there” [Respondent 13, page 7]

And finally we see Respondent 24, (page 19) table 6.7; addressing this issue by highlighting that because supervisors and operational managers come under great pressure from production and financial targets, and thus the integration of safety in to the procurement of services is emphasized. He highlights three key principles:

- (1) Working fairly and ethically;
- (2) Delivering value to the country i.e. working sustainably and he explains that using local resources whilst developing them;
- (3) Safety is a core value.

6.3.1.7 Culture development through learning organisations

One of the key attributes identified by HSL (2008) was that high reliability organisations had a culture where they were actually learning organisations. The following quotes given in table 6.8 illustrate how senior leadership view learning and development as critical to a sound EHS culture.

Table 6.8: Sub-Theme - Culture development through learning organizations

Representative Data	Reference
“It hasn’t always been the case and you know I know there are organisations who when they have an incident don’t investigate, don’t take it seriously, um do not want the potential negative publicity of the story coming out you know. So, um I think the external scrutiny is probably necessary if you don’t have that internal discipline. If you’ve got the internal discipline and you’ve got enough people passionate about it and the integrity is there, I think it’s less important that the independent reporting lie if it’s the case.”	Respondent 12, Aviation Industry page 13 & 17

Representative Data	Reference
(Page 13) "The learning from incidents er has made safe...made flying far safer than it ever has been. If you look at the track record, I think the airline industry is a very, very good example as is you know any form of transport that's done on a mass basis. It's a very, very good example of the continuous improvement that arises from the analysis...of accidents." (Page 17)	
"We put a serious effort right from the beginning and safety is an item that we are discussing really regularly over here. Er...for us every meeting er on projects, not every meeting on projects, starts off with a, with a discussion, a detailed discussion on safety and having us over there, a safety moment where there is a...learning that is shared relevant to, to activities that could be, that could be coming up in time on that particular project. That's part of the culture that we are instilling in the organisation."	Respondent, 14 Construction, page 3
You know the first thing that the HSE manager of mine told me on my first day, he said, you know every rule is there because something went wrong in the past. And um it's very sad but that's how we learn apparently. But that's to make sure that we learn then very quickly and it happens only once and then everybody is clear on that. But sharing on this, in this field is very important."	Respondent 28, Oil and Gas , page 8
"Secondly, awareness tools where you make awareness about any accident that happens elsewhere and educate your employees about it and you make sure that it shouldn't happen er in your organisation. And also the tool that when you bring an equipment, new or moveable equipment, you make sure that it is to the highest standard that's available, to protect people who are working on it."	Respondent 18, page 8

Respondent 12 (page 13), table 6.8 explains that the investigation of incidents is very important and the learning is very critical especially to maintain integrity through the scrutiny that is undertaken especially in investigations. And later also goes on to say:

.... *"The learning from incidents er has made safe...made flying far safer than it ever has been. If you look at the track record, I think the airline industry is a very, very*

good example as is you know any form of transport that's done on a mass basis. It's a very, very good example of the continuous improvement that arises from the analysis...of accidents." [Respondent 12, page 17]

In contrast it is noteworthy that in the construction industry, the EHS culture is not as well established, with Respondent 14 (Page 3), table 6.8 from the construction sector saying that the safety and EHS culture is not as prolific and that time is required for there to be a culture where meeting start with safety talks and where there is effective learning and sharing lessons etc.

Crudely, one interesting interviewee explains the development of rules and regulations that try to shape the EHS culture within organisations. Respondent 28 from the oil and gas storage industry explains from his experience, why these rules have been developed:

You know the first thing that the HSE manager of mine told me on my first day, he said, you know every rule is there because something went wrong in the past. And um it's very sad but that's how we learn apparently. But that's to make sure that we learn then very quickly and it happens only once and then everybody is clear on that. But sharing on this, in this field is very important." [Respondent 28, page 8]

It can be drawn from this that industry safety and EHS process, procedures and cultures have developed on the back end of incidents occurring and therefore this would lead us to appreciate that senior management's and leadership's role in investing organisational resources into investigations is notably important to both the organisation and the industry. It also highlights the importance for industry in sharing that same learning and development such that people adopt safer practices and are part of a more effective EHS culture. Finally this next quote demonstrates that at the operating level, training and awareness are all really very important:

"Secondly, awareness tools where you make awareness about any accident that happens elsewhere and educate your employees about it and you make sure that it shouldn't happen er in your organisation. And also the tool that when you bring an equipment, new or moveable equipment, you make sure that it is to the highest

standard that's available, to protect people who are working on it." [Respondent 18, page 8]

6.3.1.8 Impact of the International Standards and the Size of Organisation

Larger organisations are more exposed generally to criticism and scrutiny when it comes to EHS performance. Larger organisations tend to be driven to create a better safety/EHS culture and EHS performance due to this. Larger organisations either operate internationally or have international partners, for example.

In a response from a leader in the oil and gas storage industry that deals with suppliers, charters, traders, ships and a variety of government regulators and authorities, he notes:

"I know but there's the part that is imposed on you and then there's the part where it's part of the culture part of the company. So I'm just saying that there's only so much the government can do. Again it depends again on the maturity of the country. Some parts of the region you know there's nothing that the government does to make sure that there's a minimum standard of governance in terms of EHS. But otherwise it's, I don't see a changing much. Meaning it's the people again you know, if you can spread it slowly, and I think it happened over a very...very long period of time. I mean look at The majors they obviously got their act together, not always you know. But you know them going into other subsidiaries and had get passed on slowly. so that way of spreading the culture I don't think is going to change much. But it will happened slowly there not going to be a revolution that's for sure. It's going to evolve and it's got to do.. it will always be tide back to profitably. The more money a company makes the more as time goes by the more it will look into these things. You know a bit more seriously, unfortunately that's the case. I can tell a local company that used to run in order to sell rust buckets and whatever you know. Now it's on the verge of getting listed and things like that. It all comes together cos you want to make the business bigger and then you need to go to the bans and the banks have standards. Because they don't wanna be associated with something happening with you. So it's back to how successful, how big the company is going to be. Small company always you gonna have problems with them." (Respondent 1, Page 15-16)

So the impact of international standards and the role of what is commonly termed “best industry practice” should not be under-estimated. This section established eight sub-themes of the main theme developing a safety culture and communication. In the next sections we proceed to evaluate the other themes.

6.3.2 EHS/Safety Leadership

In general many of the leaders interviewed spoke openly about the importance of the BoD ‘*setting a tone*’ for EHS in their organization and reinforcing that through supporting the leadership and the organization as a whole. The analysis of the responses show that safety leadership related statements ranged between 38% and 11% with an average of 18 % in the transcript content analysis.

In reviewing this Theme, further analysis establishes 5 sub-themes which are given in Figure 6.5 below:

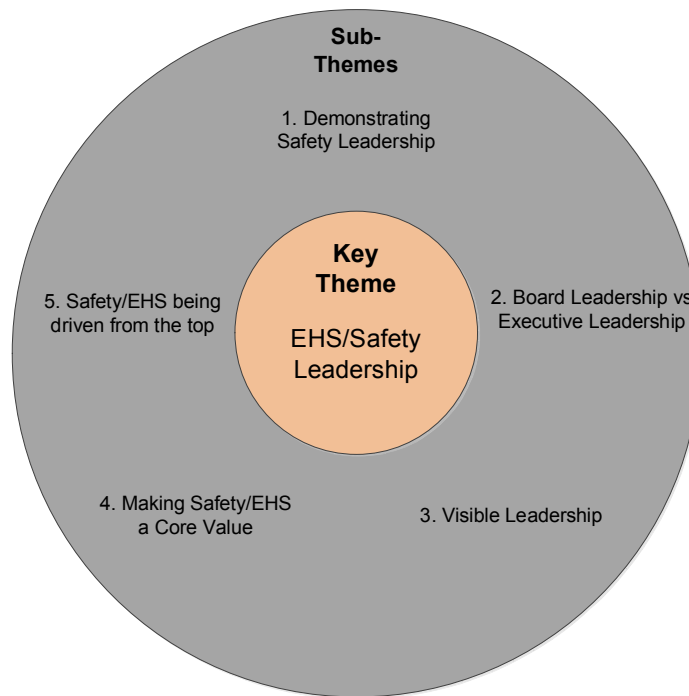


Figure 6.5: Sub-themes established for EHS/Safety Leadership

This is one of the critical themes analysed as it is a key theme in this research work. In each of the following sub-sections each sub-theme will be briefly discussed and illustrated with some key examples. We have combined in this section the quotes under these 5 sub-themes established. The quotes are more closely analysed in the following sections.

Table 6.9 – Safety Leadership Sub-Themes

Sub Theme	Representative Data	Reference
Demonstrating Safety Leadership	<i>“...what I see is that they are the leader they demonstrate to everybody first they have it, that culture they own it”. And “You see if your highest level in the company is your CEO and if the CEO is a strong believer in the safety leadership then it much easier to be driven down. If he takes that ownership and he has the leadership it much easier to set an example. He is an example.”</i>	Respondent 2, Oil and Gas, Storage, Page 1 and Page 12
	<i>“...a board member is not doing his job, if he is not interested in the HSE performance of the company coz it's, it's a key responsibility that, that he has. Sure, you'll have some people who are more experienced and have had better insight but it has to go right, you know, right across the...In our business we make it that, everyone's responsible for HSE. Er corporate support, my function, I still have a strong HSE er responsibility. I take, I attend high profile too as I go out in the field and talk to the staff, not in my line but as a member of the executive team. Er that's because we share that responsibility and we share it as an executive team. The boards the same way, you can't have someone who says, you know, it's, you know, that's his job. My job is the marketing...”</i>	Respondent 26, Oil and Gas, Upstream, Page 16

Sub Theme	Representative Data	Reference
Board Leadership vs. Executive Leadership	<i>"....Um the leadership they leave it to the er appointed management to do the leadership in that aspect. They have to separate themselves from leading the activities to directing the activities."</i>	[Respondent 18, Oil and Gas, Heavy Manufacturing, Page 1].
	<i>They're probably not fully accountable and since they're not going back to their own governments and reporting, I mean. But the minutes, the minutes are drafted, the minutes are circulated um and I'm sure, I'm sure whoever they report to, there is somebody there looking at it. So it's not, it's not just a lost piece of paper. So they're driving it and their interest is there so I mean it's not accounted from the top level and floating its way down. Um but we're accountable in a sense that we're an international governance and national laws and because we're dealing with other countries outside Bahrain, they're bringing it up, they're bringing our standards up especially on the environment.</i>	Respondent 17, Construction Page 4
Visible Leadership	<i>"But every activity will have a method of statement, how you will be doing it, how you protect that, that activity er from causing an event, what measures will be done. And ensuring that, that is communicated and understood by the, by the, by the staff who will be doing that particular activity. And out will be also er...walking around showing the visibility, questioning the staff whether they really understand and they believe the risks associated with the activities they are actually doing and rewarding them where you feel that they are er...they are doing it not because it's really a requirement but because they believe it."</i>	Respondent 14, Construction, Page 8
	<i>"Really, weekly, the CEO at least once a week if not more. Only last week we had the HSE week which was done very quickly. And yet he was virtually going</i>	Respondent 16, Manufacturing,

Sub Theme	Representative Data	Reference
	<i>around the plant on a daily basis for at least an hour or two with area contracting, with employees talking to them, questioning them, discussing with them safety issues. Only safety he was not discussing anything else. When you have a driver like that, that shows everybody else how important safety is to the company not just him. And he's the guy who's the leader and everybody else will follow."</i>	Page 2
Making Safety a Core Value	<i>"...it's about core values, it is about core values. So, if, if the elected leadership, it doesn't, it can only be 1 or 2, but if they play their role, see safety as a core value, and that, and what that means, coz it's easy to say safety first, they all do it, you can see stickers all over the place. But, it's basically saying, you ask your organization and until everyone gives you the same answer, you know, you haven't communicated well and they don't believe you. So, is safety, production, costs or reserves or something else, more important? If you ask me, I'll tell you, if you ask my deputy, he should tell you the same answer. If you ask managers sometimes you get different answers. Why? Because he's under pressure and he's told, now fix that and get that production on stream and you know, don't worry about your helmet and don't worry about this or that. Now, you got to deal with it right at the core, so, and that's a core value, becomes a core value."</i>	Respondent 24, Oil and Gas, Upstream, Page 19
Safety/EHS being driven from the Top	<i>"...Well if they don't then you don't have the culture because particularly in this society such as the UAE, if the leadership doesn't come from the top, it won't just spring up somewhere. You might have um people who are enthusiastic about it but you certainly won't get the lateral support of it broadly within the organization if you don't get the absolute conviction from the top, that this is necessary. You know I think as a CEO of an organization, the way I would characterize this, um I</i>	Respondent 12, Aviation, Page 2

Sub Theme	Representative Data	Reference
Safety/EHS being driven from the Top	<i>need to be ultimately accountable that everything is being done to minimize and control the risks that are inherent in a business like ours.”</i>	
	<i>“They play a very important role for the EHS issues. For any, any business to be successful or implemented, the leadership is so important and commitment from the leadership demonstrate that. It becomes makes the EHS issue on the top of all agendas of the company and unless the CEO is committed and demonstrate that commitment to different parties of the organization er then EHS will always take a low profile. If, on the other side, if the management and company, headed by the CEO put a special emphasis and demonstrate that emphasis that the importance of EHS, into not only talking about it but er demonstrating the processes with the system, the procedures and the guidelines and so on, for people to implement, then it does not er do that. And, you know, EHS usually, it’s, it’s not sets of rules to do. More than that, it is a culture of the company behavior and so on. And it becomes a commitment from each individual to make EHS part of their day to day business. So, if that individual sees that there is no really commitment from the top management of the company, then they don’t think that seriously. On the other side, if they see that the top level of the management including the CEO and the management committees and so on, that they are committed to the safety issues so on, obviously that will reflect in his, taking that the EHS more serious in this business.”</i>	[Respondent 29, Oil and Gas, Diversified, Page 1].

6.3.2.1 Demonstrating Safety Leadership

EHS must be demonstrable. In fact by definition EHS leadership requires that leaders demonstrate commitment and this is something that leaders must

establish with their followers. The following two statements are explicit statements either about the BoD or when leaders were talking about themselves.

“....what I see is that they are the leader they demonstrate to everybody first they have it, that culture they own it”. And “You see if your highest level in the company is your CEO and if the CEO is a strong believer in the safety leadership then it much easier to be driven down. If he takes that ownership and he has the leadership it much easier to set an example. He is an example.” [Respondent 2, Oil and Gas, Storage, Page 1 and Page 12].

So belief is an extremely important aspect and being able to create that demonstrable ownership leading to stewardship is critical. The following quotations from the interviews are a good example of taking personal leadership and expecting the same of others, especially the Board:

“....a board member is not doing his job, if he is not interested in the HSE performance of the company coz it's, it's a key responsibility that, that he has.

“.....Er that's because we share that responsibility and we share it as an executive team.”

“The boards the same way, you can't have someone who says, you know, it's, you know, that's his job. My job is the marketing...”

[Respondent 26, Oil and Gas, Upstream, Page 16].

The above quotes clearly spell-out responsibility for both executive and board leaders.

6.3.2.2 Board Leadership vs Executive Leadership

In chapters 2 and 3 much discussion revolved around the shared and collective responsibilities and accountabilities of the executive management

team and the Board members. Others also debated the way that leadership they expected should be expressed, with EHS leadership being a particular task of the appointed management team:

“....Um the leadership they leave it to the er appointed management to do the leadership in that aspect. They have to separate themselves from leading the activities to directing the activities.” [Respondent 18, Oil and Gas, Heavy Manufacturing, Page 1].

The view was however different to Respondent 17, (page 4), table 6.9 where he did not see the Board as fully accountable. This may also be related to the fact that this organisation is a Private Joint Stock Company where the shareholders are represented by different countries. His view seemed to place greater accountability on the CEO where the governance was more driven by international and national laws and regulations rather than direct Board action and expectations.

Consistent with the literature review we see that Respondent 9, (page 2) explains that accountability is with the CEO and that the Board are accountable for setting the agenda and appointing the competent CEO to ensure safe and reliability in the company operations:

“...You have to be careful with the words of accountability because if you're the CEO, you are about the execution, so you have their ultimate accountability. So, and that's your job and that's your role. You know the boards not there day to day. So yeah, to use the word accountability that's truly not the word you use, ok, because I think that CEO's just by definition of the role the way I think about it is, hold somebody accountable for delivery. And so the board's role is, they're accountable for appointing a CEO who will be accountable for appointing the person, so they have the more accountability for the process and the selection of the people in the leadership who will be running the company.” [Respondent 9, Oil and Gas, Upstream, Page 2].

6.3.2.3 Visible Leadership

This next quotation is a good example of an opinion that supports visible leadership in EHS which is critical. EHS/Safety leadership needs to be demonstrated and employees and company staff, even contractors must see the CEO and the leadership team practicing EHS quite visibly in terms of demonstrating their commitment.

“But every activity will have a method of statement, how you will be doing it, how you protect that, that activity er from causing an event, what measures will be done. And ensuring that, that is communicated and understood by the, by the, by the staff who will be doing that particular activity. And out will be also er...walking around showing the visibility, questioning the staff whether they really understand and they believe the risks associated with the activities they are actually doing and rewarding them where you feel that they are er...they are doing it not because it’s really a requirement but because they believe it.” [Respondent 14, Construction, Page 8].

So the direct involvement, felt leadership on the ground is extremely important for various reasons that include viability to the workforce, seeking to understand the risks associated with the work activities, rewarding good practice and generally supporting the drive for EHS. This next example is again of visible leadership and is from a very large factory in Bahrain:

“Really, weekly, the CEO at least once a week if not more. Only last week we had the HSE week which was done very quickly. And yet he was virtually going around the plant on a daily basis for at least an hour or two with area contracting, with employees talking to them, questioning them, discussing with them safety issues. Only safety he was not discussing anything else. When you have a driver like that, that shows everybody else how important safety is to the company not just him. And he’s the guy who’s the leader and everybody else will follow.” [Respondent 16, Manufacturing, Page 2].

6.3.2.4 Making Safety/EHS a Core Value

Making safety and EHS a core value is very important. Later on in this chapter we talk about how some leaders even said that EHS needs to be a business value driver too. So another good explanation of the realities that impact on safety performance and leadership is that unless EHS becomes a core value you will not have full engagement from all. This next quote elaborates on this:

“....it’s about core values, it is about core values. So, if, if the elected leadership, it doesn’t, it can only be 1 or 2, but if they play their role, see safety as a core value, and that, and what that means, coz it’s easy to say safety first, they all do it, you can see stickers all over the place. But, it’s basically saying, you ask your organization and until everyone gives you the same answer, you know, you haven’t communicated well and they don’t believe you.”

And after explaining that you need to have everyone in the organisation to understand the importance of safety and EHS along with production and costs etc., he states:

“Now, you got to deal with it right at the core, so, and that’s when a core value, becomes a core value.”

[Respondent 24, Oil and Gas, Upstream, Page 19].

6.3.2.5 Safety/EHS being driven from the top

Tribal dynamics is part of the inherent culture within the GCC. The leadership plays an important role in establishing the expectations and these are followed out of respect and belief that this traditionally more benevolent leader who usually exhibits some level of servant leadership traits and skills will be doing what is in the greater good of the organisation.

In this next quotation shows how powerful senior leadership belief and commitment is in the context of EHS within an organization:

“...Well if they don’t then you don’t have the culture because particularly in this society such as the UAE, if the leadership doesn’t come from the top, it won’t just spring up somewhere. You might have um people who are enthusiastic about it but you certainly won’t get the lateral support of it broadly within the organization if you don’t get the absolute conviction from the top, that this is necessary. You know I think as a CEO of an organization, the way I would characterize this, um I need to be ultimately accountable that everything is being done to minimize and control the risks that are inherent in a business like ours.” [Respondent 12, Aviation, Page 2].

And finally, the quotation from Respondent 29 (Page 1), Table 6.9 brings together core aspects of EHS leadership; demonstrated commitment to EHS and placing emphasis on the importance of EHS; processes and systems and making it part of the business. The emphasis on that the commitment of every individual within an organisation is very much linked to the commitment that is seen from the top leadership is apparent. This can be further extended to include the Board leadership as well who set the expectations for many aspects of the organisation’s workings.

6.3.3 Influence and Accountability

The theme of influence and accountability is a central theme in this research. The average frequency of statements from all interviews was 13.5% with a maximum of 20% from a respondent from the Oil and Gas Storage Industry and 8% from a respondent from the Construction Industry.

Four key sub-themes evolved from this qualitative analysis of the aspects that relate to influence and accountability and are given below in figure 6.6.

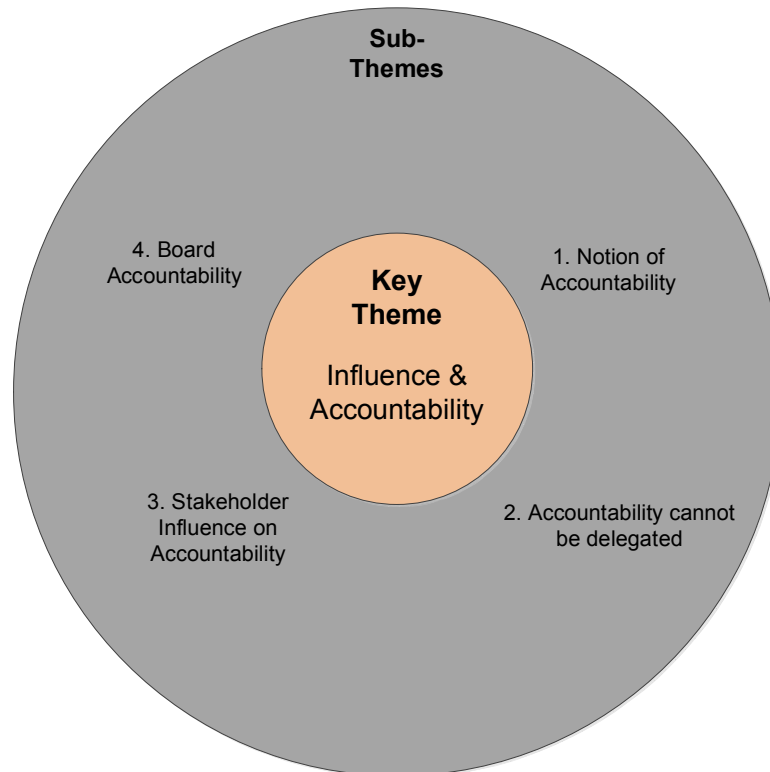


Fig 6.6: Sub-Themes established for Influence and Accountability

Table 6.10: Influence and Accountability Sub-Themes

Sub Theme	Representative Data	Reference
Notion of Accountability	<i>"Well again, it's the boards accountability is usually dictated by the company or the governments with that you're working with. Er, if the government has no accountability for disasters, there's, there's no accountability, is there? If there's no laws that dictate, that are enforced and of course in the Gulf there's very little environmental laws, that are, as you probably are aware, that are enforced. So, where's the accountability? It goes from country to country, Kuwait's a great example."</i>	Respondent 22, Oil and Gas, Upstream, Page 3
	<i>"The relation, the relationship I have with the chairman is, he says, I pay you the salary to take those accountabilities onto your shoulders. And I can obviously always turn to him for advice but the buck</i>	Respondent 21, Oil and Gas, Upstream,

Sub Theme	Representative Data	Reference
	<i>stops on my desk, not on his. That's my job, that's my duty."</i>	Page 2
Accountability cannot be delegated	<p><i>"Researcher: If I were to ask you that question styled in, maybe a, you know, a bigger, in a company of, of your size. I mean, maybe because this is a maybe, a slightly smaller organization in a big sort of oil services Supply Company you know like the big, the big, you know, sort of, the high street names you know. Um do you, do you, do you see the same, do you see the same thing, I mean do you see...</i></p> <p><i>Respondent: No, I would think, I would think when you get up to the, the super major sizes that they would have right up at board level. They would have that accountability, that there's probably a, a... I would expect to see that one of those board of directors, one of the directors on the board would have that portfolio firmly in his hands and it would probably be the managing director, I would think. Which would be similar to, I think the way PDO structured. The portfolio of HSE I imagine is on their CEOs desk and he doesn't delegate that to anybody else."</i></p>	Respondent 21, Oil and Gas, Upstream, Page 3
	<p><i>Researcher: Yeah, I mean personally and also collectively as a group of people and individuals. What kind of accountability do they take lets God-forbid if for example you have a very serious incident which incapacitates the production for say 15 days</i></p> <p><i>Respondent: Ok. Now, the board, when it comes to the board being it EHS related, being it financial or otherwise they have personal accountability where each and every one of them if proven negligence, if there is clear proof of negligence or complacency or whatever's been proven then they could individually be held accountable, be held to account legally individually and collectively but individually. And this is what's happening at this moment and time....."</i></p>	Respondent 8, Oil and Gas, Refining, Page 5

Sub Theme	Representative Data	Reference
Accountability cannot be delegated	<p><i>Researcher: So, it's going up to the board level already.</i></p> <p><i>Respondent: Yeah, so 2011, unfortunate events, that was a previous board but it was all over the newspaper, the parliamentary investigation committee the first one was take work to the prosecution, prosecute the board. First recommendation, there were 15. The first one was, prosecute the board individually, like this. As simple as this. It's a different world, a different ball game, now with the transparency, with the communication, with the media with the fact that everyone sees everything. You cannot afford not to be held to account. I think the communication world has made it in such a way that he automatically held to account whether you like it or not.</i></p>	
Stakeholder Influence on Accountability	<p><i>"Well I think first and foremost my experience with working with boards is that they are ultimately accountable to members of the public, customers, employees. <u>That the organizations of which they are the most senior representatives behave with diligence and um justify the confidence that participants in that company, be their customers, staff, shareholders, can be assured that they've got the confidence that the company is behaving with the utmost um... you know diligence in areas of health safety, security etc. And I think that ultimately they are accountable and if there are shortfalls, then they're the people that ultimately be will be accountable and will take the consequences of incidents happening.</u> You know when an incidence occurs its, the focus should be on the board, what has the <u>board failed to do to ensure that the culture of the organization was taking the utmost care to ensure incidence like that shouldn't and... shouldn't happen.</u>"</i></p>	Respondent 12, Aviation, Page 1

Sub Theme	Representative Data	Reference
Board Accountability	<i>"...So, it's very evident that the board of directors has a key role in any form of governance in any major corporation to provide that scrutiny around all aspects of the corporation's activities at a very high level to make sure that good governance is being maintained by the directors of the corporation specifically to health and safety. In our business it's a prerequisite so the boards interest should be and is high in ensuring the goals that we have which become challenging, more challenging year on year because we want to get to zero incidents, zero injuries and zero fatalities. The board's roles should be to have a pretty good understanding of why we are driving towards that, and it is to ensure the safety of individuals in the organization, to ensure consistency and performance and to protect assets and people frankly."</i>	Respondent 6, Diversified Oil and Gas, Page 1
	<i>"So, when you say about responsibility we are all responsible, the board..... except when you say the board, the board is collective eh, in fact unfortunately I don't have the luxury of taking responsibility in that sense, I am individually responsible whereas the board id the board – it is many individuals and in that sense again I would say I am a bit more involved...."</i>	Respondent 1, Oil and Gas Storage, Page 3
	<i>"the CE is ultimately responsible for the performance of the organization far as I can see. But the board has accountability that they must make sure that the direction they are providing is in line with that policy. They cannot give a conflicting message. There are times that decisions will need to be made at board level and if they're not consistent with the EHS policy, if financial performance overrides environmental performance or safety performance then they should be accountable for that."</i>	Respondent 5, Oil and Gas - Refining, Page 3
	<i>"Researcher: "... I'm asking this question in the sense</i>	Respondent

Sub Theme	Representative Data	Reference
Board Accountability	<p><i>of, you know, I would like to know in your view, do you think that the accountability of the board, therefore, is being delegated to the CEO?</i></p> <p><i>Respondent: No, no, accountability can't delegate, responsibility can. So, the accountability always stays with the board.</i></p> <p><i>Researcher: Ok.</i></p> <p><i>Respondent: And, if the CEO doesn't perform well enough on safety, then get rid of the CEO.</i></p> <p><i>Researcher: Yeah.</i></p> <p><i>Respondent: Yeah, so that's their accountability. What they can do, is to, they can assign the responsibility for the execution and the er and good HSE practice in his organization. And clearly, and that to me, should be clearly delegated. I wouldn't like to have board members involved in a, in the day to day running of the company, I don't think that's the er..."</i></p>	26, Oil and Gas - Upstream, Page 5
	<p><i>"Well, I think they should because it, it helps that whole line of management right down to the boots and gloves level. Um we have what we call our supervisors form, which we have every quarter. And it's always my goal to have them attend at least one of them even if it's just to simply to attend it and listen quietly in the background while we discuss the issues that are in hand to each one of those team leaders in the supervisors form. Um so, once again I, I think there's a real need for them to try and stay connected with what the real issues are. And, as any good manager does whenever we have our board meetings, the very number one agenda item is always HSE first, to try to keep them connected with what's going on, what are the issues, what is the actual er health of the, of the corporation itself entertaining those HSE goals." (Page 2)</i></p>	Respondent 21, Page 2

6.3.3.1 Notion of Accountability

Considerable support for the notion of accountability of Boards is apparent, together with issues of apportioning that accountability. The comparison that one of the respondents explained compared the board member with a politician in the government and that kind of accountabilities they carry in terms of governance. He explains this becomes even more of an important issue when it comes to regions where the laws and regulations are not as strong. Let's take for example:

"Well again, it's the boards accountability is usually dictated by the company or the governments with that you're working with. Er, if the government has no accountability for disasters, there's, there's no accountability, is there? If there's no laws that dictate, that are enforced and of course in the Gulf there's very little environmental laws, that are, as you probably are aware, that are enforced. So, where's the accountability? It goes from country to country, Kuwait's a great example." [Respondent 22, Oil and Gas, Upstream, Page 3].

The executive leaders of organisations seem to take greater accountability. In fact the accountability is very different and this CEO saw that actually in reality the accountability was his and not the Board (Chairman). They are there to guide and advise, but the accountability stays with the CEO:

"The relation, the relationship I have with the chairman is, he says, I pay you the salary to take those accountabilities onto your shoulders. And I can obviously always turn to him for advice but the buck stops on my desk, not on his. That's my job, that's my duty." [Respondent 21, Oil and Gas, Upstream, Page 2].

This is discussed further on in section 6.3.3.4.

6.3.3.2 Accountability cannot be delegated

A further example from the CEO perspective of a relatively smaller Oil and Gas upstream organization operating in Oman is explored below:

“Researcher: If I were to ask you that question styled in, maybe a, you know, a bigger, in a company of, of your size. I mean, maybe because this is a maybe, a slightly smaller organization in a big sort of oil services Supply Company you know like the big, the big, you know, sort of, the high street names you know. Um do you, do you, do you see the same, do you see the same thing, I mean do you see...”

Respondent: No, I would think, I would think when you get up to the, the super major sizes that they would have right up at board level. They would have that accountability, that there’s probably a, a... I would expect to see that one of those board of directors, one of the directors on the board would have that portfolio firmly in his hands and it would probably be the managing director, I would think. Which would be similar to, I think the way PDO is structured. The portfolio of HSE I imagine is on their CEOs desk and he doesn’t delegate that to anybody else.” [Respondent 21, Oil and Gas, Upstream, Page 3].

So clearly some leaders see that this accountability cannot be delegated and therefore CEOs would really need to have good reliable processes and competent managers to run those processes to prevent losses and EHS issues in general. But there are also completely different perspectives; here the leader talks about action being taken against Board Directors by the Government in an organization within the Industry. This is demonstrated well in Respondent 8’s in table 6.10. He does describe an important case study:

Respondent: *Yeah, so 2011, unfortunate events, that was a previous board but it was all over the newspaper, the parliamentary investigation committee the first one was take work to the prosecution, prosecute the board. First recommendation, there were 15. The first one was, prosecute the board individually, like this. As simple as this. It’s a different world, a different ball game, now with the transparency, with the communication, with the media*

with the fact that everyone sees everything. You cannot afford not to be held to account. I think the communication world has made it in such a way that he automatically held to account whether you like it or not. [Respondent 8, O&G, Refining, Page 5].

So clearly it must depend on what kind of organisation, the shareholding, the government rules and regulations in that particular state and so on. However, the above two examples show that there are leaders who feel that Boards are not really accountable except for appointing the right persons and monitoring company performance to others who feel that greater engagement and accountability is required as they can be prosecuted if they fail to do their job effectively.

6.3.3.3 Stakeholder Influence on Accountability

In more recent years and as discussed in chapters 2 and 3 of this thesis, stakeholders can have an impact today on business in general. Whether these stakeholders are employees, shareholders, NGO's or otherwise, they can all have a considerable influence on performance. Stakeholders expect a certain performance from companies and their leadership.

In this example, the perspective from the aviation industry seems to take a clear stance and seems to address to a greater extent the stakeholder management. This can be seen in the quote from Respondent 12 in table 6.10.

"Well I think first and foremost my experience with working with boards is that they are ultimately accountable to members of the public, customers, employees. That the organizations of which they are the most senior representatives behave with diligence.....And I think that ultimately they are accountable and if there are shortfalls, then they're the people that ultimately be will be accountable and will take the consequences of incidents happening" [Respondent 12, Aviation, Page 1].

6.3.3.4 Board Accountability

The perspective of the leadership within the Oil Majors seems to be clearly indicating the active responsibility of boards in playing a role in engaging with management and motivating them towards better and better performance.

“...So, it’s very evident that the board of directors has a key role in any form of governance in any major corporation to provide that scrutiny around all aspects of the corporation’s activities at a very high level to make sure that good governance is being maintained by the directors of the corporation specifically to health and safety.....” [Respondent 6, Diversified Oil and Gas, Page 1].

In the remaining part of this quotation (see table 6.10) the CEO explains that the board has an interest in setting higher standards to reach these challenging targets; should have a good understanding of what drives good performance; and ensures consistency and performance from the organisation.

This next quotation indicates the perspective from another leader of a joint venture oil storage terminal. Here it is clear that the accountability and responsibility is upon him and that the Board of Directors are collectively responsible:

“So, when you say about responsibility we are all responsible, the board..... except when you say the board, the board is collective eh, in fact unfortunately I don’t have the luxury of taking responsibility in that sense, I am individually responsible whereas the board is the board – it is many individuals and in that sense again I would say I am a bit more involved....” [Respondent 1, Oil and Gas Storage, Page 3].

This is consistent with Respondent 21’s response discussed in sub-section 6.3.3.1.

In the next example, there is a clear message that the CEO is ultimately responsible, but that the Board must direct and when they make decisions which contradict the EHS policy of an organization, they should be ready for those consequences.

“the CE is ultimately responsible for the performance of the organization far as I can see. But the board has accountability that they must make sure that the direction they are providing is in line with that policy. They cannot give a conflicting message. There are times that decisions will need to be made at board level and if they’re not consistent with the EHS policy, if financial performance overrides environmental performance or safety performance then they should be accountable for that.” [Respondent 5, O&G, Refining, Page 3].

Finally, another example from the upstream Oil and Gas Industry, where the leadership believes that delegation of responsibility is accepted but not the notion of the delegation of accountability.

“Researcher: “.... I’m asking this question in the sense of, you know, I would like to know in your view, do you think that the accountability of the board, therefore, is being delegated to the CEO?”

Respondent: No, no, accountability can’t delegate, responsibility can. So, the accountability always stays with the board.

Researcher: Ok.

Respondent: And, if the CEO doesn’t perform well enough on safety, then get rid of the CEO.

Researcher: Yeah.

Respondent: Yeah, so that’s their accountability. What they can do, is to, they can assign the responsibility for the execution and the er and good HSE practice in his organization. And clearly, and that to me, should be clearly delegated. I wouldn’t like to have board members involved in a, in the day to day running of the company, I don’t think that’s the er...” [Respondent 26, O&G, Upstream, Page 5].

The above opinion on the Board action is consistent with the separation of roles and was mentioned as one of the key results areas (i.e. hiring, managing and firing the CEO) of Boards by Finkelstein and Mooney (2003).

6.3.4 Monitoring EHS Performance

As discussed extensively in the literature, monitoring organizational performance is one of the key responsibilities and fiduciary duties of a Board Director. In high risk/high reliability organizations, EHS performance monitoring is extremely critical. In general, there was a great deal of agreement in this context between almost all of the leaders interviewed. On analysis of this theme, 3 sub-themes emerged and are shown in Figure 6.7.

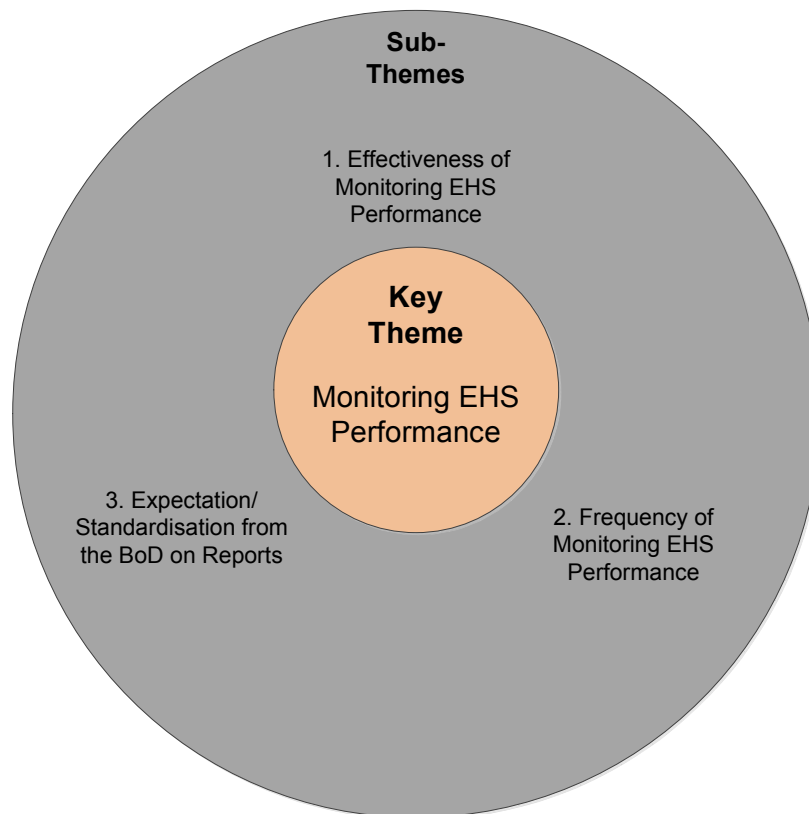


Fig 6.7: Sub-Themes established for Monitoring EHS Performance

Table 6.11: Monitoring EHS Performance Sub-Themes

Sub Theme	Representative Data	Reference
Effectiveness of Monitoring EHS Performance	<p><i>“Researcher: so in terms of influence and directing performance of EHS, would you not agree it’s quite a difficult line to draw, isn’t it.</i></p> <p><i>Respondent: I think because at the moment, from my limited experience, the boards have very little knowledge of the EHS side of the organization, they don’t focus on it that much. But I think recent times, especially in our industry, that’s being elevated.”</i></p>	[Respondent 5, Oil and Gas - Refining, Page 4].
	<p><i>This SVP was talking about the issue of the need for a re-focus on PSM indicators rather than personal safety statistics in the industry, he referred to the recent incidents in refining and fertilizer plants etc. “....The management team was actually flying to the rig to award er er to give a HSE award to the crew of the rig because they completed X amount of whatever hours, with the, with no empty eye or something like this. I don’t know the, I don’t recall the exact statistics. So, I think the industry has been so busy with the LTI, with all these statistics, number of misses. LTI gets reported against man-hours and that perhaps er there wasn’t emphasis as it should be on the big picture, on the process safety issues. What are the big things that can cause an explosion in the plant and that can take, that he can have in a, in a, in a drilling situation, you have a blowout situation eh. In a process plant you</i></p>	[Respondent 27, Oil and Gas - Upstream, Page 7].

Sub Theme	Representative Data	Reference
Effectiveness of Monitoring EHS Performance	<p><i>can have a major leak which will result in explosion. These are, these are the big issues as opposed to the LTI, this guy, you know, tripped and fell and he, he you know, broke his finger or a, or a hammer dropped on his foot and, and hurt his feet and he has you know, one half a day in the hospital. So, I think the industry is moving or should be moving or started to move towards looking at, that how it call process safety.</i></p>	
Frequency of Monitoring EHS Performance	<p><i>Respondent: They actually get, they get a weekly, they get a weekly report which goes to the board and his Excellency the minister. It won't contain just highlight of the business but we will include if there are any significant EHS issues in there.</i></p> <p><i>Researcher: That's quite regular, one every week.</i></p> <p><i>Respondent: Very regular, every week... It goes to the chairman, board of directors and his Excellency. Its 2 pages only. So its 2 pages, which I usually prepare and it is very similar to also, its 80% similar to what we issue, what we call management in news brief, to all company employees. So we tell them about what the progress in the marketing, what are our gross margins, what are our main events that we did, if there are any celebrations, EHS or otherwise and projections, just short projections. We also have a monthly report which is a more detailed report on the projects, on the progress.</i></p>	[Respondent 8, Oil and Gas - Refining, Page 9].

Sub Theme	Representative Data	Reference
Expectation /Standardization from the BoD on Reports	<p><i>“Respondent: yeah, no this is something they expect to and we do that on every board meeting. We start of by giving them part of the management report and the management update. It’s the update on the KPI’s that we have, that we have set for ourselves. So as you know we set targets and we set stress targets and we have the baseline. And we will report each, if it’s every quarter or if it’s every 2 months, whenever we have a meeting we update that information and present that to them. Just to give them a bird’s eye view of how we faired during the last period. And sometimes you will be way below the target by midyear, and sometimes you will you know in a negative way precede the target. And they will probably, we will wanna ask some more questions and might even ask for an investigation, a separate investigation that might be independent from the operation itself to have a look at that and report back to them. Either directly as board of they might do that through audit committee or some other committee.</i></p> <p><i>Researcher: I mean you have one of the top ten oil storage companies in the world. Would you say that was standard practice in the industry?</i></p> <p><i>Respondent: I do believe so; I mean most of our competitors will report back to the board a lot of the figures that they get are safety and health related to their board of directors on a monthly, by monthly basis, which is usually the frequency of when the</i></p>	<p>[Respondent 3, Oil and Gas - Storage, Page 4].</p>

Sub Theme	Representative Data	Reference
Expectation /Standardization from the BoD on Reports	<p><i>boards tend to meet. Every 6 to 8 weeks. I think also, to eer you know, being requested to benchmark information against competitors and provide that to the board to see how we're doing versus peers in the industry and you know gives that, eerr, they can gage how we're doing versus the others so gives them a comfort feeling, a comfort factor that we are performing or not performing. The information should be fed back to them on a continual basis, otherwise if we do it only once a year too much time will have then pass for them to be able to actually be effective as a board. So I think they need to, it's the right of the board of directors to ask the management to give constant feedback or updates."</i></p>	
	<p><i>"We have er...leading and lagging indicators, KPI's, where we review every month as well as quarterly. We have a dashboard, we have a plant to our dashboard, and we have department of dashboards and that we use as a reference as a measure to drive through the safety."</i> <i>[Respondent 16, Manufacturing, Page 5].</i></p> <p><i>"Their rule as far as I can see is really setting clear expectations which are challenging and which are realistic in accordance with, with the industry norms and holding the management team accountable for delivering er...safety performance that is sustained the company's reputation. So we do have</i></p>	<p>[Respondent 14, Construction, Page 1].</p>

Sub Theme	Representative Data	Reference
Expectation /Standardization from the BoD on Reports	<i>specific targets that are set for us as an executive team and we have got to be reporting to the board every quarter, demonstrating that we are delivering er on these set targets.”</i>	
	<i>“Researcher: Ok. Um how often and how and why do you update the board of directors on EHS performance in your organization and do they really expect any updates?</i> <i>Respondent: Well to tell the truth it’s a little bit maybe embarrassing. We only update them usually when um unfortunately something goes wrong. Well touch on wood nothing really has gone wrong but like small incidences and these kind of things we do tend to inform them. But I mean we, perhaps I think what’s lacking um is that yeah, maybe they, a certain standard format or a better knowledge of how to communicate this to the board is...you know, a standard kind of thing would be quite er quite welcome, helpful.</i>	[Respondent 15, Shipping, Page 3].

6.3.4.1 Effectiveness of Monitoring EHS Performance

This sub-theme explores the effectiveness of monitoring performance. The Monitoring EHS performance aspect has already been defined, but it is critical to understand the significance of effectiveness on this. The following examples illustrate this well:

“Researcher: so in terms of influence and directing performance of EHS, would you not agree it’s quite a difficult line to draw, isn’t it.

Respondent: I think because at the moment, from my limited experience, the boards have very little knowledge of the EHS side of the organization, they

don't focus on it that much. But I think recent times, especially in our industry, that's being elevated." [Respondent 5, Oil and Gas -Refining, Page 4].

So in the above example, the root-cause of the issue is that Boards in the view of this leader lack critical understanding and knowledge and therefore even if they monitor they may not be able to add much value. In the next example, the leader talks about the issues facing the Oil and Gas industry with a lack of focus on Process Safety and instead a focus on reactive personal safety KPIs which are typically reported to the Board.

"...So, I think the industry has been so busy with the LTI, with all these statistics, number of misses. LTI gets reported against man-hours and that perhaps er there wasn't emphasis as it should be on the big picture, on the process safety issues. What are the big things that can cause an explosion in the plant and that can take, that he can have in a, in a, in a drilling situation, you have a blowout situation eh. In a process plant you can have a major leak which will result in explosion. These are, these are the big issues as opposed to the LTI, this guy, you know, tripped and fell and he, he you know, broke his finger or a, or a hammer dropped on his foot and, and hurt his feet and he has you know, one half a day in the hospital. So, I think the industry is moving or should be moving or started to move towards looking at, that how it call process safety. [Respondent 27, O&G, Upstream, Page 7].

This SVP was talking about the issue of the need for a re-focus on PSM indicators rather than personal safety statistics in the industry, he referred to the recent incidents in refining and fertilizer plants etc. So the Board in their helping to guide and govern, should in fact have sufficient understanding on what kind of indicators need to be reported and analysed. This does not require a great deal of technical knowledge but perhaps a broad understanding of the industry benchmarks for EHS in their particular line of business.

6.3.4.2 Frequency of Monitoring EHS Performance

In an interesting discussion with a leader within the refining business, EHS is reported very frequently, to a very high level and contains EHS information to the Board. This is generally not an industry expectation.

Respondent: *They actually get, they get a weekly, they get a weekly report which goes to the board and his Excellency the minister. It won't contain just highlight of the business but we will include if there are any significant EHS issues in there.*

Researcher: *That's quite regular, one every week.*

Respondent: *Very regular, every week... It goes to the chairman, board of directors and his Excellency. Its 2 pages only. So its 2 pages, which I usually prepare and it is very similar to also, its 80% similar to what we issue, what we call management in news brief, to all company employees. So we tell them about what the progress in the marketing, what are our gross margins, what are our main events that we did, if there are any celebrations, EHS or otherwise and projections, just short projections. We also have a monthly report which is a more detailed report on the projects, on the progress.*

[Respondent 8, Oil and Gas -Refining, Page 9].

From the interviews conducted with various CEOs and senior leaders reports ranged from a weekly such as in this example above to every 3 months (quarterly). Many of the organisations have monthly reports to the board which are brief but contain some brief information regarding EHS, which includes performance indicators, any EHS events or initiatives conducted or otherwise incidents in the last reporting period. This is explained further in the next section too.

6.3.4.3 Expectation /Standardization from the BoD on Reports

In one interview where the focus was on Oil Storage and Movement, where effectively the companies provide a service to Oil Majors, Shipping Charterers and Oil Traders when asked about how often the BoD expected the periodic EHS reports from the CEO:

“...yeah, no this is something they expect to and we do that on every board meeting. We start off by giving them part of the management report and the management update. It’s the update on the KPI’s that we have, that we have set for ourselves. So as you know we set targets and we set stress targets and we have the baseline. And we will report each, if it’s every quarter or if it’s every 2 months, whenever we have a meeting we update that information and present that to them. Just to give them a bird’s eye view of how we faired during the last period.”

He goes on further to explain:

“I do believe so; I mean most of our competitors will report back to the board a lot of the figures that they get are safety and health related to their board of directors on a monthly, by monthly basis, which is usually the frequency of when the boards tend to meet. Every 6 to 8 weeks. I think also, to eer you know, being requested to benchmark information against competitors and provide that to the board to see how we’re doing versus peers in the industry and you know gives that, eerr, they can gage how we’re doing versus the others so gives them a comfort feeling,.....So I think they need to, it’s the right of the board of directors to ask the management to give constant feedback or updates.” [Respondent 3, O&G, Storage, Page 4].

Even within Manufacturing, Construction and perhaps a little less so in the Shipping Industry (which is highly regulated internationally), reporting on EHS performance is both a standardized practice and an expectation for the board of Directors. This is illustrated in the following three examples:

Manufacturing with leading and lagging indicators reported:

“We have er...leading and lagging indicators, KPI’s, where we review every month as well as quarterly. We have a dashboard, we have a plant to our dashboard, and we have department of dashboards and that we use as a reference as a measure to drive through the safety.” [Respondent 16, Manufacturing, Page 5].

Construction with setting specific targets and then quarterly indicators reported:

“Their rule as far as I can see is really setting clear expectations which are challenging and which are realistic in accordance with, with the industry norms and holding the management team accountable for delivering er...safety performance that is sustained the company’s reputation. So we do have specific targets that are set for us as an executive team and we have got to be reporting to the board every quarter, demonstrating that we are delivering er on these set targets.” [Respondent 14, Construction, Page 1].

Finally, the Shipping industry reporting lagging indicators if something goes wrong. In saying this it should be appreciated that a great deal of other reports goes to so many other agencies covering aspects including EHS matters:

“Researcher: Ok. Um how often and how and why do you update the board of directors on EHS performance in your organization and do they really expect any updates?”

Respondent: Well to tell the truth it’s a little bit maybe embarrassing. We only update them usually when um unfortunately something goes wrong. Well touch on wood nothing really has gone wrong but like small incidences and these kind of things we do tend to inform them. But I mean we, perhaps I think what’s lacking um is that yeah, maybe they, a certain standard format or a better knowledge of how to communicate this to the board is...you know, a standard kind of thing would be quite er quite welcome, helpful. [Respondent 15, Shipping, Page 3].

6.3.5 Risk Management

The management of risk is one of the key success factors of a High Reliability Organization as discussed in Chapter 1. Exploring the viewpoints of leadership on this theme/element was very important and insightful and we

see that although different industries manage risk in a different way, they all manage risk nevertheless.

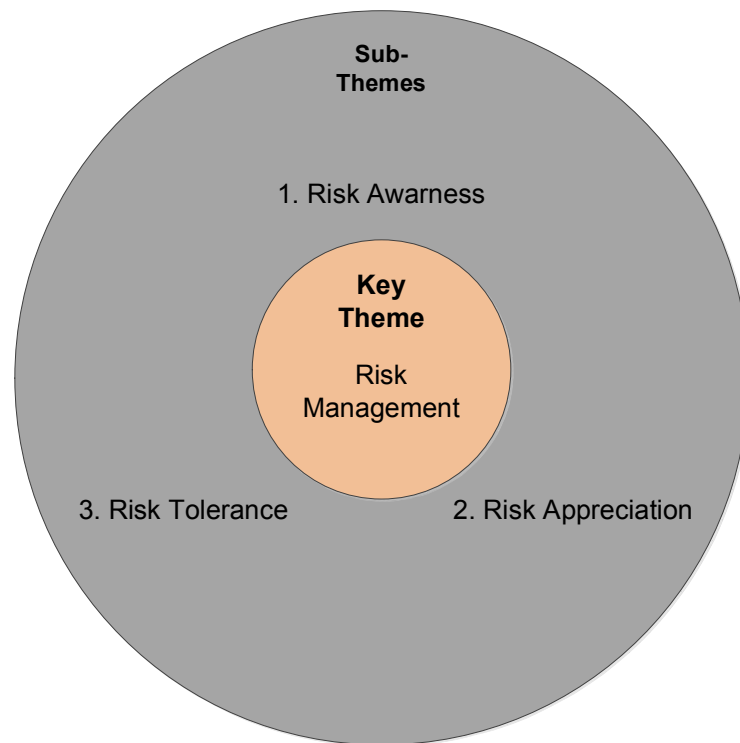


Fig 6.8: Sub-Themes established for Risk Management

Table 6.12: Risk Management Sub-Themes

Sub Theme	Representative Data	Reference
Risk Awareness	<i>".....I think they should insist because I personally as a board member would be very uncomfortable being accountable for something where I had absolutely no visibility to reassure me that my accountability was effectively mitigated. And I think a risk register is a symbol but it's actually it should be the evidence of a greater level of process and understanding throughout the organization, that your risks are being effectively monitored and managed and you are being alerted when those risk profiles change. So I think definitely it's a very good instrument. Um the only thing about a risk register is I would feel very, very uncomfortable if</i>	Respondent 12, Aviation, Page 7

Sub Theme	Representative Data	Reference
Risk Awareness	<i>risk registers are used as placebos to fob people off into a false sense of security you know. Here's the piece of paper and you can see everything's green so there's not a problem you know. How valuable, how good is the process behind it really? Um so I think the board should not only insist that its accountabilities, there is visibility as to about how well its accountabilities are mitigated but also they should satisfy themselves that the processes that sit behind the information that's reported through the risk register are really robust and accurate."</i>	
	<i>"I'm going to have to honestly reply that I have absolutely no idea of what conversations go on around risk management at the board level of our company. I'm not, I just, I would guess and that would be the wrong thing to do. Yes I mean they are talking about safety so what I'm quite confident they are doing is talking about future trends, they are talking about major aspect of enterprise, risk management when they are looking at a pipeline of projects that goes out in 20, 30, 40 years in our case when you talk about large upstream oil and gas projects, but again this is my uninformed view but basis of my knowledge of the company. That's really where their view of risk management is."</i>	Respondent 6, Diversified Oil and Gas, Page 5
Risk Appreciation	<i>".....what they do can be very powerful in a symbolic way, that they care, that they take is seriously, that they know what the risks are for the people working in that company. They may not be involved in that directly – you know – but if they can appreciate the risks then they should that they know the risks and they can at a very broad level address these – and it can be a very powerful message that they send across to the organization."</i>	Respondent 1, Oil and Gas Storage, Page 1
	<i>"We actually, we wrote, we derived the risk management er model and we present it to the board and the board endorsed it". And also "...But this is how we do it, it's er we did risk assessment</i>	Respondent 20, Power and Utilities, Page 4 & 8

Sub Theme	Representative Data	Reference
	<i>for you. We have, we bought your assistant to, to record it and we do near misses and we keep updating ourselves. And also we exploring new risks so when, when a new substation comes and new overhead line comes, we say, what, what new risks we have. Also we have the obligations towards the, towards the general public, so we need to make sure that the general public is also safe and they don't get harmed by our network."</i>	
Risk Tolerance	<i>"They have to show a genuine interest in HSE er...they have to have a full understanding of HSE impact on the business to start with. In today's world you know, we live in a small world because of er the technological advances in communication er... Reputation is extremely important er... Companies in our kind of industries, oil and gas, you know this is again a small world, it's not...they live by their reputation. You can easily get out of business, run out of business if your HSE record is bad. Ok. And even as from we are contractors, we are not really oil Production Company but because we are in the oil and gas business we work in very sensitive areas. And nobody will let you get in an oil field to do work for them if they know your safety record is bad. You can cause them a disaster that will ultimately shut them down or cause them to lose billions of dollars. We are in this kind of industry where tolerance for low HSE standard is you know is not there."</i>	Respondent 13, Manufacturing, Page 7

6.3.5.1 Risk Tolerance

Risk "tolerance" is a term commonly used in more recent years in the context of enterprise risk management as discussed in chapter 2. Similar to, and a less commonly used compared to risk appetite, risk tolerance defines the level of risk an organisation is willing to live with to conduct its business. In high risk industries some risks have to be accepted and mitigated to a "as low as reasonably practical" level. But it is the role of the Board to set that

tolerance level. This is from an interview with a leader in aviation, talking about the Board, also see table 6.12:

“.....I think they should insist because I personally as a board member would be very uncomfortable being accountable for something where I had absolutely no visibility to reassure me that my accountability was effectively mitigated. And I think a risk register is a symbol but it's actually it should be the evidence of a greater level of process and understanding throughout the organization, that your risks are being effectively monitored and managed and you are being alerted when those risk profiles change.there is visibility as to about how well its accountabilities are mitigated but also they should satisfy themselves that the processes that sit behind the information that's reported through the risk register are really robust and accurate.” [Respondent 12, Aviation, Page 7].

From the above the risk assessment and registry process is very significant. The Board therefore needs to understand not only the risks, but comfort themselves with the level of accuracy and effectiveness of the risk identification and assessment processes as well. This next example is a leader from the Oil and Gas:

“I’m going to have to honestly reply that I have absolutely no idea of what conversations go on around risk management at the board level of our company. I’m not, I just, I would guess and that would be the wrong thing to do. Yes I mean they are talking about safety so what I’m quite confident they are doing is talking about future trends, they are talking about major aspect of enterprise, risk management when they are looking at a pipeline of projects that goes out in 20, 30, 40 years in our case when you talk about large upstream oil and gas projects, but again this is my uninformed view but basis of my knowledge of the company. That’s really where their view of risk management is.” [Respondent 6, Diversified Oil and Gas, Page 5].

6.3.5.2 Risk Appreciation

Risk management is very much motivated by the appreciation of risk and the impacts that such risks that relate to EHS issues can have on an organisation. The Board and the executive management whilst may defer much of the actual detailed risk assessments to specialists within an organisation, need to have a certain level of understanding of such risks and more importantly what they need to do to direct the organisation to manage those risks through elimination and reduction strategies.

“.....what they do can be very powerful in a symbolic way, that they care, that they take is seriously, that they know what the risks are for the people working in that company. They may not be involved in that directly – you know – but if they can appreciate the risks then they should that they know the risks and they can at a very broad level address these – and it can be a very powerful message that they send across to the organization.”

[Respondent 1, Oil and Gas Storage, Page 1].

Furthermore, it must be appreciated that some management and board decisions in business may in fact create EHS risks either by directing new business ventures or processes or otherwise continuing certain risky operations. EHS risks can be varied in their nature ranging from legal non-compliance to physical risks in the company operations on people, processes and assets which also lead to financial losses.

In the Power and Utilities Industry, this next interview extract :

“We actually, we wrote, we derived the risk management er model and we present it to the board and the board endorsed it”.

And also:

“...But this is how we do it, it's er we did risk assessment for you. We have, we bought your assistant to, to record it and we do near misses and we keep updating ourselves. And also we exploring new risks so when, when a

new substation comes and new overhead line comes, we say, what, what new risks we have. Also we have the obligations towards the, towards the general public, so we need to make sure that the general public is also safe and they don't get harmed by our network." [Respondent 20, Power and Utilities, Page 4 & 8].

This last quotation is interesting as it raises the issue of risk to the general public, so this can be considered a society impact risk as well. In all cases the leadership teams in organisations need to understand the risks which are involved.

6.3.5.3 Risk Awareness

Risk appreciation and risk awareness are very similar. These are created as sub-themes as risk awareness as the appreciation of risk is borne from the highlighting of these risks associated with the business and possible actions to be taken. But there needs to be a general awareness of the risks related to each industry. Board directors may sit on boards of various industries and therefore they must appreciate the differences of different types of EHS risks which pertain to each different industry.

Finally, an extract from an interview from the Manufacturing Industry depicts the impact of reputation damage from incidents on the clients being the oil and gas industry in this case. Protecting company sustainability is a board director obligation and here this is highlighted in terms of the board members needing to have that awareness of the impact of untoward incidents.

"And nobody will let you get in an oil field to do work for them if they know your safety record is bad. You can cause them a disaster that will ultimately shut them down or cause them to lose billions of dollars. We are in this kind of industry where tolerance for low HSE standard is you know is not there." [Respondent 13, Manufacturing, Page 7].

6.3.6 EHS Awareness, Knowledge and Competence

Having the right level of awareness, knowledge and understanding of an industry and the HSE risks related to it is of critical importance. Some of the extracts in this section identify a highly sensitive and crucial question. How much can ultimately be expected from a Group of Directors who have only superficial understanding of EHS matters?

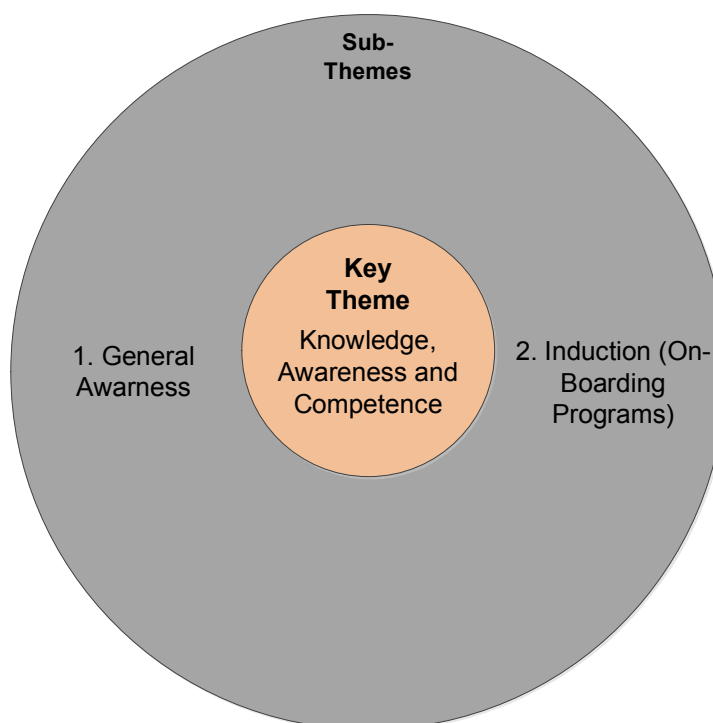


Fig 6.9: Sub-Themes established for EHS Awareness, Knowledge and Competence

Table 6.13: EHS Awareness, Knowledge and Competence Sub-Themes

Sub Theme	Representative Data	Reference
General Awareness	<i>"I can talk about my board. EHS isn't high on their agenda, yet. We're trying as an organization to get a more EHS aware, especially from process safety. And it's interesting to see the Chairman now asking to</i>	Respondent 5, O&G Refining, Page 4

Sub Theme	Representative Data	Reference
General Awareness	<i>be informed of process incidents. Which means he's trying to understand is there an underline rumble he needs to be aware of. Is there a potential something coming. The board is ultimately responsible to the shareholder, right. Now for a NOC that shareholder is a government. But like in the west there are a lot of people that put their life savings into shares. So he should be accountable for, the Chairman should be accountable for everything that could be financial and sustainable performance of the organization. And to me an injury or a Lost Time Incident falls into that category. So I would like to say yes, but are we there? Probably not, because if you read Chairman reports how often do they start the report by say this is the safety performance of our organization" and.....</i>	
	<i>"... it all comes back down to the risks associated with the business. I mean for them the ERM is key because that tells them the highest risks the organization is facing. And for them they then need to understand what the risks are so really that is the document I think would govern a lot of their risk assessment thinking. But they need to understand what the involve means...because sometimes in ERM we get a little technical, we might talk about, I don't know, for us it's not too... it's the pipe lines and the non-availability of the lab and stuff."</i>	Respondent 5, Refining, Page 19
Induction (On-Boarding) Programs	<i>"Yes, right at the beginning on the second month, their appointment. Although half of them were already previous executives actually, in this company itself, but the other 4</i>	Respondent 8, Refining, Page 8

Sub Theme	Representative Data	Reference
Induction (On-Boarding) Programs	<p>were not. So we did actually conduct a 5 hour induction. Now the induction to be fair is not EHS induction only, it was kind of for the whole business. But we took part of that, probably 1 hour on the EHS side, but then also we dedicated another 2 hours for the risk registers and in terms of our overall risk but then we touched on the EHS. This is the second thing. The third thing, in terms of educating and we did not because this is the familiarization, from thereon they have requested that on a quarterly basis they should have the safety statistics, the EHS statistics for the company and this is presented to them. What are loss times, no loss time, first aid, vehicle accidents and any major compliance to the environment if any? So, this they requested and it is part of there. But we did not have a very specific EHS familiarization per say so more of a continuing education. So ERM familiarization the initial short one as part of the overall and SHEQ moment and the quarterly safety statistics. That's how we do that. And of course now, with the safety alerts and the incidents reporting that we involve them in."</p>	
	<p>"I mean for board um I mean you definitely really need to know the basics um and er you know, basically try to build on it. And if not, I think the company for example might have to um you know provide for example, training sessions er you know for the board to go ahead and attend to. At least for them to um you know expand, expand their knowledge in this particular field. But I don't see that being done much.</p>	<p>Respondent 15, Shipping, Page 7</p>

Sub Theme	Representative Data	Reference
Induction (On-Boarding) Programs	<p><i>Researcher: Do you think that that might happen in the future?</i></p> <p><i>Respondent: I hope so. I mean from er...we, I will just give, home coming we haven't done that yet, mainly because our board are quite very seniors in the government which they can't you know take time or whatever to actually do such things. And like I said, some of the HSE's are more specific rather than more general so I guess you start with the general and then maybe go to more specific. But I hope that, that starts soon, that we do that more often."</i></p>	
	<p><i>"So a new director will have to come to the company to spend a couple of days understanding the company from all aspects, its operation, its er procedure in the EHS. And that gives them an awareness and then they will see the company progress and benchmark reports about the other facilities. Thirdly, also um the government has been more proactive now in appointing directors who have knowledge and experience in the industry. For example, some of our board of directors has been CEO of organizations, similar organizations. So we have one who use to be um XXXX (Large Regional Minerals Company) president and now he's vice president of XXXX (Large International Petrochemical Company) We have another one, at the moment he's XXXX CEO in Saudi Arabia. We have one who's working in petrol chemical industry in Qatar. We have one in the, who use to work in our organisation and became a director. So people are aware of it and those who are not</i></p>	<p>Respondent 18, Manufacturing, Page 10</p>

Sub Theme	Representative Data	Reference
Induction (On-Boarding) Programs	<i>aware of it, we take the initiative to also do an induction program to make them aware of."</i>	
	<p><i>"Researcher: I want to ask you about the um the board of directors in general, as well. Do you feel that in organizations, they have sufficient basic awareness training in EHS and safety, you know, in the industries? I mean, the guys are all pointing on the board, do they have that minimum knowledge of, to contribute to the, you know, to the leadership issues, that we spoke in the earlier questions?</i></p> <p><i>Respondent: I think, if the board is made up properly, I think they have expertise in all areas, not just finance.</i></p> <p><i>Respondent: So, I think there has to be some operational er member that has the technical background and the understanding er to educate the other board members and add insight to any decision made within EHS. I think it's very important</i></p> <p><i>Researcher: Ok.</i></p> <p><i>Respondent: I don't think all board members would have that knowledge or capability but as long as you have sufficient er people at the table, yeah.</i></p> <p><i>Researcher: But, one interesting thing then, I would ask, is that, you always say that, safety is common sense, right? So...</i></p> <p><i>Respondent: It is, if you're raised that way and it's no common sense (respondent coughs) is it, in most environments. I think common sense is a, is a gift that usually comes from having a lot of accidents. (They all laugh)"</i></p>	Respondent 22, Oil and Gas, Upstream, Page 15
	<i>"Firstly, at a senior leadership level to understand again a cultural change if an</i>	Respondent 6, Diversified Oil and

Sub Theme	Representative Data	Reference
Induction (On-Boarding) Programs	<i>organization hasn't fully embraced the importance if they are in a high risk environment of focusing on the core aspects collectively as a leadership team of OEMS safety standards. That might be ways of driving out change but the fundamentals have to be understood by and believed in by those individuals appointed into their roles as board members and directors. You can't half believe in it so maybe an elevated role can help lead the horses to water but the horses have to also know why they're gonna drink."</i>	Gas , Page 7
	<i>"Um see I mean it's, it's a big subject when you look at HSE coz it covers a lot of, a lot of things. At what level is it supposedly acceptable? I mean I guess we have to first find out what is, I mean is it just general awareness is that, is that sufficient enough? Are we looking at for example um you know, to be a master at er I mean it really depends on what, what level are we looking at. Um I mean for board um I mean you definitely really need to know the basics um and er you know, basically try to build on it. And if not, I think the company for example might have to um you know provide for example, training sessions er you know for the board to go ahead and attend to. At least for them to um you know expand, expand their knowledge in this particular field."</i>	Respondent 15, page 7

6.3.6.1 General Awareness

Having a good level of general awareness is important. The level of competence and knowledge is defined differently for board members and an executive management team to say EHS specialists. Nevertheless there is a

certain degree of understanding which is required in order for a board to exhibit that right level of understanding and appreciation of risk. This is critical for there to be support for requirements to reduce risk, not to make decisions or direct the organisation to do something that may create more risks and so on.

This is illustrated in the first example below expanded in table 6.13.

"I can talk about my board. EHS isn't high on their agenda, yet. We're trying as an organization to get a more EHS aware, especially from process safety. And it's interesting to see the Chairman now asking to be informed of process incidents. Which means he's trying to understand is there an underline rumble he needs to be aware of. the Chairman should be accountable for everything that could be financial and sustainable performance of the organization. And to me an injury or a Lost Time Incident falls into that category. So I would like to say yes, but are we there? Probably not, because if you read Chairman reports how often do they start the report by say this is the safety performance of our organization"

And much later also in the same interview he explains that:

"... it all comes back down to the risks associated with the business. I mean for them the ERM is key because that tells them the highest risks the organization is facing. And for them they then need to understand what the risks are so really that is the document I think would govern a lot of their risk assessment thinking. But they need to understand what the involve means...because sometimes in ERM we get a little technical, we might talk about, I don't know, for us it's not too... it's the pipe lines and the non-availability of the lab and stuff." [Respondent 5, Refining, Page 4 and Page 19].

This was one example of many and is used as a clear illustration. The next section focuses more on what organisations have been doing to create awareness and competency in the board directorship.

6.3.6.2 Induction (On-Boarding Programs)

There are some efforts to present EHS awareness through combined Board Director Induction or on-boarding programs. Ultimately there is an expectation that they also develop an understanding and knowledge from the interactions with the Board as Directors:

"Yes, right at the beginning on the second month, their appointment. Although half of them were already previous executives actually, in this company itself, but the other 4 were not. So we did actually conduct a 5 hour induction. Now the induction to be fair is not EHS induction only, it was kind of for the whole business. But we took part of that, probably 1 hour on the EHS side, but then also we dedicated another 2 hours for the risk registers and in terms of our overall risk but then we touched on the EHS. This is the second thing. The third thing, in terms of educating and we did not because this is the familiarization, from thereon they have requested that on a quarterly basis they should have the safety statistics, the EHS statistics for the company and this is presented to them. What are loss times, no loss time, first aid, vehicle accidents and any major compliance to the environment if any? So, this they requested and it is part of there. But we did not have a very specific EHS familiarization per say so more of a continuing education. So ERM familiarization the initial short one as part of the overall and SHEQ moment and the quarterly safety statistics. That's how we do that. And of course now, with the safety alerts and the incidents reporting that we involve them in." [Respondent 8, Refining, Page 8].

There is thus is a significant effort which is made in this organisation to provide a structured approach to giving the board directors enough knowledge and understanding of the business.

The next example analysed is from the shipping industry. Again it seems that there is still a conviction that there may be a need to develop training and inducting of Boards on EHS matters, although shipping has had its fair share internationally of major EHS events with a lot of negative publicity:

"I mean for board um I mean you definitely really need to know the basics um and er you know, basically try to build on it. And if not, I think the company for example might have to um you know provide for example, training sessions er you know for the board to go ahead and attend to. At least for them to um you know expand, expand their knowledge in this particular field. But I don't see that being done much.

Researcher: Do you think that that might happen in the future?

Respondent: I hope so. I mean from er...we, I will just give, home coming we haven't done that yet, mainly because our board are quite very seniors in the government which they can't you know take time or whatever to actually do such things. And like I said, some of the HSE's are more specific rather than more general so I guess you start with the general and then maybe go to more specific. But I hope that, that starts soon, that we do that more often." [Respondent 15, Shipping, Page 7].

In manufacturing, the story seems somewhat different with formal induction and induction (on-boarding) programs structured to give directors the appropriate level of knowledge of the industry and the organization:

"So a new director will have to come to the company to spend a couple of days understanding the company from all aspects, its operation, its er procedure in the EHS. And that gives them an awareness and then they will see the company progress and benchmark reports about the other facilities. Thirdly, also um the government has been more proactive now in appointing directors who have knowledge and experience in the industry."

And goes on to say: " So people are aware of it and those who are not aware of it, we take the initiative to also do an induction program to make them aware of." [Respondent 18, Manufacturing, Page 10].

One respondent from the Oil and Gas Upstream industry explains that the Board make-up should be done in such a way that you have the right expertise on the Board:

“Researcher: I want to ask you about the um the board of directors in general, as well. Do you feel that in organizations, they have sufficient basic awareness training in EHS and safety, you know, in the industries? I mean, the guys are all pointing on the board, do they have that minimum knowledge of, to contribute to the, you know, to the leadership issues, that we spoke in the earlier questions?”

Respondent: I think, if the board is made up properly, I think they have expertise in all areas, not just finance.

And later also says:

Respondent: I don't think all board members would have that knowledge or capability but as long as you have sufficient er people at the table, yeah.

[Respondent 22, Oil and Gas, Upstream, Page 15].

Somewhat consistent with the above example the following extract demonstrates the view on the collective wisdom of the Board and therefore a basic understanding, conviction and some knowledge is required.

“Firstly, at a senior leadership level to understand again a cultural change if an organization hasn't fully embraced the importance if they are in a high risk environment of focusing on the core aspects collectively as a leadership team of OEMS safety standards. That might be ways of driving out change but the fundamentals have to be understood by and believed in by those individuals appointed into their roles as board members and directors. You can't half believe in it so maybe an elevated role can help lead the horses to water but the horses have to also know why they're gonna drink.”

[Respondent 6, Diversified Oil and Gas , Page 7].

Even with the last example Respondent 15, (page 7) in table 6.13, the challenge of undertaking the training is explained. Assigning the right level and it is a question of expanding their knowledge at the end of the day. Delivering to them an education session to give them the basic understanding is important.

6.3.7 Operational Excellence & Systems

Operational Excellence and the development of EHS Management Systems in organizations have been at the forefront of many high risk/high reliability industries. The reasons have been simple, placing a management system in place helps bring about order and defines operating standards and envelops.



Fig 6.10: Sub-Themes established for Operational Excellence & Systems

Table 6.14: Operational Excellence & Systems Sub-Themes

Sub Theme	Representative Data	Reference
Operational Excellence	<i>"Respondent: Um. Crikey its gotta be at least, I think it was the XXXX prior to the XXXX and YYYY merger, so it goes back over a decade. Maybe more, I think it may be even 15 or 20 years so the OEMS the operational excellence management system is a company proprietary"</i>	Respondent 6, Diversified O&G , Page 9

Sub Theme	Representative Data	Reference
Operational Excellence	<p><i>and as you have mentioned previously there are other parallel models in some of the other oil majors. So we have ten pillars or principles of operation of all excellence so these are ten guidelines which I think go back yeah its gotta be 10 to 15 years minimum I would say. So these principles of operational excellence will,</i></p> <p><i>Researcher: I've seen this in fact I've seen also companies like in Bangkok they got something else they've called it actually given it an Arabic name. They called it something but they not exactly the same but they're very similar kind of.....</i></p> <p><i>Respondent: Yes so these are kind of ten tenants, principals. And then below that there's again a proprietary system but there's below that a series of high level processes and then below that a large series of sub processes up to about 46 which should group together all the key sets of aspects around dos and don'ts to make sure that we are operating safely, reliably and taking into account the health of individuals. So, that's one of them, that's the kind of primary system that is used in XXXX. Now, in sub systems at certain groups may or may not use, so as a I think I mentioned to you once before LPS which is the loss prevention system, now it's not its XXXX pays to use that under license so the loss prevention system is U.S based. LPS inc. has developed and runs this tool. I think ZZZZ also uses LPS and so that focuses on preventative observations and measures to systematically review the business and by observing critical tasks that have well defined processes for them. You can look for potential</i></p>	

Sub Theme	Representative Data	Reference
Operational Excellence	<p><i>losses that might have occurred if somebody hasn't followed the processes right. This could be driving a truck or it could be operating a drill, it could be moving a large piece of equipment and so by stopping and assessing the risk before you undertake that activity and going through the process and observing one another you kind of pre empty the risk that might happen. So that is how LPS is another tool that's used and there are whole host of others that we deploy throughout the business but the key one as you said is the OEMS and it dates back I think 10 to 15 years."</i></p>	
Systems Thinking	<p><i>"So I think one thing you do, is you have the good foundations laid. So you have excellent reporting, you have good communication, you have processes in place to manage safety and that's a broad statement and there's a lot to that and having all the procedures, the rules, expectations and all that stuff. People there to supervise when you're having structure work, every kind of work that's being done is supervised where people are competent, permanent work systems, you know this whole infrastructure, where you can say, boy you can, you go home in the day and you say, you know I have done really everything possible within my power to ensure that you know we've minimized the chance of accidents. You know based on the learning's in the past but, but I think it's every year you really can do a deep think and you say what additional things. You know, you want to keep things fresh, if you just put it in some program and then you just kind of rant every year, you won't have excellence"</i></p>	<p>Respondent 9, O&G, Upstream, Page 7</p>

Sub Theme	Representative Data	Reference
Beyond (Legal) Compliance	<i>"I can think of my time in ICI, where the corporate policies um... various industry committees were formed in the sort of days of the European Union coming around to harmonize what was the Shell standard, the BP standard and its now call the European directive. But each of those organizations had a pretty good process already going and in a way the legal agreement was let's take the common elements and adopt that as the... and it was a minimum. So I think you know there's a certainty that no organization should go below that, but not many organizations should be satisfied with knowing we just comply with the standard. In some areas it will be fine, er but it, you know it's back to risk again. If your business hinges on surviving in this industry because it's good at something, being at the minimum level is not where you want to be, it's not the right place. But there are other areas where, ok, if we comply that's fine, good. But we should never, not comply. Legislation is usually a few years behind industry anyway because the committee that then draws up the legislation is usually drawing on learning coming from industry.</i>	Respondent 12, Aviation, Page 15
Consequence Management	<i>"...We take consequence management very seriously, so, with the, we have 12 rules, 12 safety rules, golden, high level golden rules, which are compliance, intervene and respect. So, compliance is about, know the rules and comply with them. Intervention is about, when you see something that's not right, stop it, shut it down or if somebody's crossing the road when they're, you know, just stop it, so intervene. And respect is, respect er personal safety, the</i>	Respondent 24, Oil and Gas, Upstream, Page 9

Sub Theme	Representative Data	Reference
	<p><i>environment, you know, don't damage the environment, whatever. So, those 3 are the critical core element, but then, there's 12 specific rules, golden rules, that in the research, are the cause of 97, 98 % of safety incidents in the oil and gas industry. And, there's, 4 of them are driving related, very simple, seatbelts, don't use your mobile phones, don't exceed, don't, don't drink and whatever. A number are, process related, don't go inside contained, work from heights without harness etc, etc. If you fail any one of those, 2 of them is instant dismissal, smoking and drugs and alcohol, on work, on site, you're out. It doesn't matter how important you are, you're out. And then, if we have issues with the minister of manpower, the minister of labour, we deal with it but those are the rules. For the others, we have a, 3 strikes and you're out."</i></p>	
Best Industry Practice	<p><i>"Well each, we have a HSE management system er which sets out the, the classic things about sort of, defines leadership role and gives recommendation on how to do that, systems and procedures um monitoring, reporting. So, the, the system is there, so you need a, a healthy robust system. And, in the XXXX Group Companies, we've got what are called, codes of practice, that are, that come from the Group and they were developed from er the best industry practice. So, they've, they've gone around to, to the bigger oil industry er operators, reviewed their systems, taken the parts they've liked from them, made it into an XXXX structure, which is, which is good. Um and so, our HSE management system complies with the XXXX</i></p>	<p>Respondent 26, Oil and Gas, Upstream, Page 11</p>

Sub Theme	Representative Data	Reference
	<i>code of practice. And, there, there are many codes of practice that determine how we're going to, to operate. So, that's our reference, we've built our management structures in there. Each year, we have um a HSE plan, where we itemize which activities that we think we need to undertake in that coming year and we monitor against that plan. That gives us the ability to change focus, as we see the need to. Um so, if we're, if we see a rising road safety er frequency rate, then we will implement a program to, to, to reduce that er down. So, that's, that's the flex we, you give ourselves, we give ourselves."</i>	

6.3.7.1 Operational Excellence

The most extensive example was chosen; Respondent 6, (Page 9) in table 6.14. This is a CEO of a diversified international Oil and Gas business who developed and started using the Operational Excellence model some years ago. He explains that they developed 10 pillars or tenants as if they were "Ten Commandments". These are supported by processes and sub-processes which are owned within the organisation by senior managers. The developed a proprietary system which was supported by a loss prevention system (LPS) and this helps all the businesses where very they operate in the world to deal with their risks and prevent any losses. Their OEMS system is applied throughout the organisations and integrates EHS within with all other processes and systems of work.

6.3.7.2 Systems Thinking

A system thinking approach is critical in any kind of high risk industry. These systems cover processes which include reporting, communications and the overall management of all the processes.

“So I think one thing you do, is you have the good foundations laid. So you have excellent reporting, you have good communication, you have processes in place to manage safety and that’s a broad statement and there’s a lot to that and having all the procedures, the rules, expectations and all that stuff” [Respondent 9, Oil and Gas, Upstream, Page 7].

He goes on to explain that we systems in place the infrastructure is built to prevent major incidents and again the notion of continual improvement is alluded to in this discussion and also with various CEOs. Some explained that any system you put in place needs to be able to improve itself.

6.3.7.3 Beyond (Legal) Compliance

Even in the aviation industry, leaders who pass through from one industry to another seem to bring good practices from adjacent industries like chemical and oil and gas. In this quote it is clear that driving and developing systems that go beyond legal compliance is critical.

“I can think of my time in ICI, where the corporate policies um... various industry committees were formed in the sort of days of the European Union coming around to harmonize what was the Shell standard, the BP standard and its now call the European directive. But each of those organizations had a pretty good process already going and in a way the legal agreement was let’s take the common elements and adopt that as the... and it was a minimum. So I think you know there’s a certainty that no organization should go below that, but not many organizations should be satisfied with knowing we just comply with the standard. But we should never, not comply. Legislation is usually a few years behind industry anyway because the committee that then draws up the legislation is usually drawing on learning coming from industry.” [Respondent 12, Aviation, Page 15].

Legal compliance was seen by many leaders in the interviews as the bare minimum and many said also as discussed in other section son this chapter that in some jurisdiction there are very few regulations. Therefore, the

industry must create the standards for itself to ensure a good level of compliance is achieved that prevents incidents.

6.3.7.4 Consequence Management

In this next quote, this particular interview was highly informative and detailed. This is of an upstream company within the GCC whose concession area is larger than the UK and one in which the total driven miles/day of all the employees and contractors/subcontracts nearly amount to driving to the moon! This particular leader was very passionate, and in this dialogue he explains how management systems are not about the rules and regulations only, they are about consequence management which ensures compliance and systems effectiveness:

“...We take consequence management very seriously, so, with the, we have 12 rules, 12 safety rules, golden, high level golden rules, which are compliance, intervene and respect. So, compliance is about, know the rules and comply with them. Intervention is about, when you see something that's not right, stop it, shut it down or if somebody's crossing the road when they're, you know, just stop it, so intervene. And respect is, respect er personal safety, the environment, you know, don't damage the environment, whatever. So, those 3 are the critical core element, but then, there's 12 specific rules, golden rules, that in the research, are the cause of 97, 98 % of safety incidents in the oil and gas industry. And, there's, 4 of them are driving related, very simple, seatbelts, don't use your mobile phones, don't exceed, don't, don't drink and whatever. A number are, process related, don't go inside contained, work from heights without harness etc, etc. If you fail any one of those, 2 of them is instant dismissal, smoking and drugs and alcohol, on work, on site, you're out. It doesn't matter how important you are, you're out. And then, if we have issues with the minister of manpower, the minister of labour, we deal with it but those are the rules. For the others, we have a, 3 strikes and you're out.” [Respondent 24, Oil and Gas, Upstream, Page 9].

What can be clearly understood that whilst training, education and management support are very important, the need to dismiss persons who do not comply and commit multiple of unacceptable offenses is a very important aspect of effectively managing EHS performance. A fair yet firm system must be in place.

6.3.7.5 Best Industry Practice

In this last example, the perspective from Oil and Gas sector is once again illustrated, of a company that operates within large Oil Major Group. It has many shareholders who are Oil Majors and the leader here explains how the compliance is to the Group standards which are derived from international best practice, shareholder inputs and regulations within the state. He mentions towards the end of his quote that flexibility in the system is such that it allows them to re-focus on the EHS matters that need it at the time based on what is happening.

“Well each, we have a HSE management system er which sets out the, the classic things about sort of, defines leadership role and gives recommendation on how to do that, systems and procedures um monitoring, reporting. So, the, the system is there, so you need a, a healthy robust system. And, in the XXXX Group Companies, we’ve got what are called, codes of practice, that are, that come from the Group and they were developed from er the best industry practice. So, they’ve, they’ve gone around to, to the bigger oil industry er operators, reviewed their systems, taken the parts they’ve liked from them, made it into an XXXX structure, which is, which is good. Um and so, our HSE management system complies with the XXXX code of practice. And, there, there are many codes of practice that determine how we’re going to, to operate. So, that’s our reference, we’ve built our management structures in there. Each year, we have um a HSE plan, where we itemize which activities that we think we need to undertake in that coming year and we monitor against that plan. That gives us the ability to change focus, as we see the need to. Um so, if we’re, if we see a rising road safety er frequency rate, then we will implement a program

to, to, to reduce that er down. So, that's, that's the flex we, you give ourselves, we give ourselves." [Respondent 26, O&G, Upstream, Page 11].

Later on we also discuss how actually the international standards of practice are driving peer industries and different companies to perform to higher standards. In fact this factor is extremely important and can be considered as a theme of its own.

6.3.8 Legal Imperatives for Safety

In chapter 2, there was a detailed discussion on legal imperatives for EHS in organizations and how legal compliance matters have influenced the change in outlook on safety matters in industry at large. The average number of statements relating to safety/EHS in the interviews in between the established themes was only about 7.89%. And whilst it is true the legal compliance issues had a big impact on organizational focus on EHS, from the general feedback from nearly all respondents, regardless of industry sector, legal factors were matters which were important but did not seem to be the drivers for change.

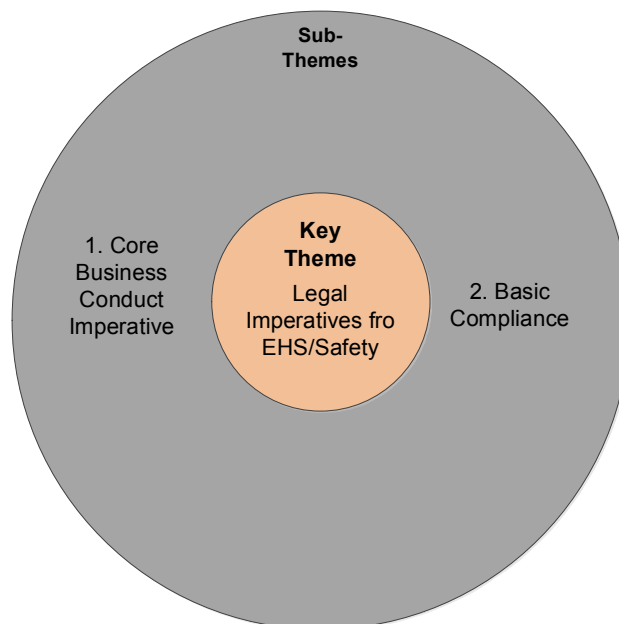


Fig 6.11: Sub-Themes established for Legal Imperatives for Safety

Table 6.15: Legal Imperatives for Safety Sub-Themes

Sub Theme	Representative Data	Reference
Core Business Conduct Imperative	<p><i>"...Well personally I don't think, it shouldn't be. It's, it's the, you know, it's the... nature of the business first of all that... technically of any business today that EHS becomes a very er important element into any business conducted. So, it becomes a business requirement rather than a legal requirement. Obviously er there are certain issues that you know, may, in certain conditions become a legal. For example, now all year regulations that is being issued by the governments, all the environmental issues and so on. It may have a legal impact of course in case of fatality and definitely any accident that the company has, then it pulls er to a legal issues..."</i></p>	Respondent 29, Diversified O&G, Page 5
Basic Compliance	<p><i>"I think we operate in different locations, not only within this country but we operate in other countries where there is a different set of rules, different set of regulations and legislation. We've always ensured that minimum we meet the laws and regulations of the country which we operate in. but I think the company and with the support of the board has establish its own set of standards as well. And we take whichever is higher and we implement them. So if the company policy on certain instruction elements or operations elements is higher eternally than it is in some of the countries that we operate in then we use that. We will not go whatever the country requirements are and if the country laws obviously supersede and are a higher level we will implement those. So that tends to drive our costs a little bit up, but it ensures that we have a higher level of governance and operational integrity."</i></p>	Respondent 3, O&G Storage, Page 5

Sub Theme	Representative Data	Reference
	<i>"This is a fact of life er...ya'ani. This is why HSE standard are higher maybe in certain countries than others. What are the legal implications if you have an accident, what are the impacts on the business itself er...yeah it has to do with, with the er lot of the stuff whether it is legal or otherwise. And basically if you are in a business transporting oil and you can cause pollution that will cost you er... billions of dollars or whatever. And then yes, you will be worried about your bottom line, you will be worried about your business, you will be worried about sequences to whatever ya'ani, can happen as a result of poor HSE or..."</i>	Respondent 13, O&G Storage, Page 5.
	<i>"This sort of the standard so that nobody can point the finger and say oh you broke the rules. In our company, again we believe that it is a key aspect of how we define our company so...You know we want the safety always to be of high standard. So the legal requirements are not the only thing driving us and we believe that it is part of our core business to do that safety in a good way and risk management overall..."</i>	Respondent 10, Heavy Construction, Page 6.

6.3.8.1 Core Business Conduct Imperative

In the first example, the leader talks of EHS as a core business conduct imperative and a business requirement as opposed to a legal requirement. Refer to the quote from Respondent 29, Diversified Oil and Gas, 5 in table 6.15.

Clearly there is a strong business and operational driver to comply with standards and regulations. However, the legal imperatives should not drive performance and there needs to be a greater driver. What is also highlighted is that there are legal repercussions on organisations that operate and don't

comply or otherwise even if they comply and have an EHS type incident, they would need to deal with the legal ramifications.

6.3.8.2 Basic Compliance

Compliance to local rules and regulations is seen as the bare minimum for EHS compliance but that they go beyond that with their Boards in order to aspire to higher and better standards, although it is recognized that this might drive the costs up at times but gives in return greater confidence to the stakeholders on business continuity and operating integrity.

“..... We’ve always ensured that minimum we meet the laws and regulations of the country which we operate in. but I think the company and with the support of the board has establish its own set of standards as well. And we take whichever is higher and we implement them. So if the company policy on certain instruction elements or operations elements is higher eternally than it is in some of the countries that we operate in then we use that. We will not go whatever the country requirements are and if the country laws obviously supersede and are a higher level we will implement those. So that tends to drive our costs a little bit up, but it ensures that we have a higher level of governance and operational integrity.” [Respondent 3, O&G Storage, Page 5].

The perspective from another leader within the same industry is blunter and explains that the cost to the business of getting it wrong and not complying with the regulations may have grave consequences.

“This is a fact of life er...ya’ani. This is why HSE standard are higher maybe in certain countries than others. What are the legal implications if you have an accident, what are the impacts on the business itself er...yeah it has to do with, with the er lot of the stuff whether it is legal or otherwise. And basically if you are in a business transporting oil and you can cause pollution that will cost you er... billions of dollars or whatever. And then yes, you will be worried about your bottom line, you will be worried about your business, you

will be worried about sequences to whatever ya'ani, can happen as a result of poor HSE or..." [Respondent 13, O&G Storage, Page 5].

And finally an example from the construction sector, see Respondent 10, Page 6, Table 6.15 where he is talking about the implications of non-compliance to HSE standards and ending up in an incident. But more interestingly, how doing good safety for many reasons including legal compliance means good business.

6.3.9 Reporting Structures and Hierarchies

Reporting structures can have a great impact and the following 5 examples illustrate the differences between reporting lines within different industries in the GCC. The dialogue explains some of the meaning behind the structures and underlined as before are the critical statements in the discussion. Two sub-themes arise here which relate to direct and indirect reporting.

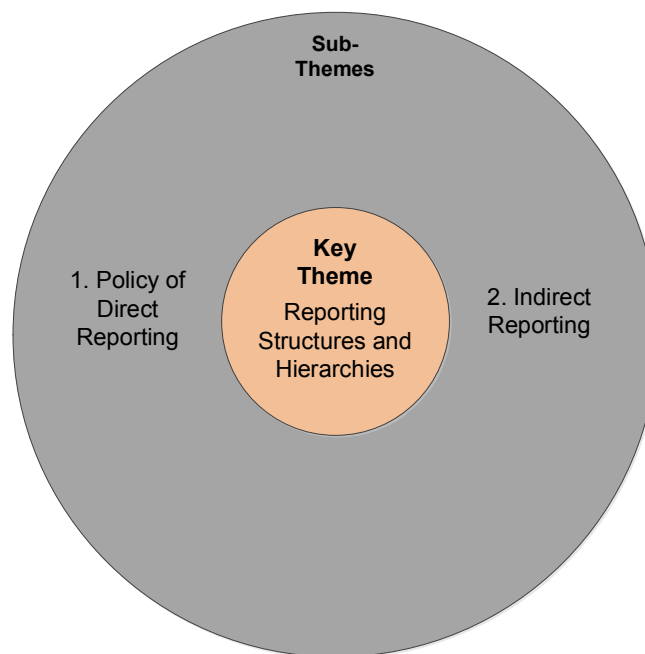


Fig 6.12: Sub-Themes established for Legal Imperatives for Safety

Table 6.16: Reporting Structures and Hierarchies Sub-Themes

Sub Theme	Representative Data	Reference
Policy of Direct Reporting	<p><i>“Respondent: Of course, but he’s my responsibility, HSE is my responsibility. There can be a lot of shifting and influence given by operational people so, yes, the HSE manager reports directly to me. They have a primary reporting schedule that is a set scheme that goes to their superior which is the operation area manager here in Oman. And, we have HSE air personnel on the rigs, who report to the tool pusher but they’ll also directly report to their manager. So, if there’s a situation that arises that the operator, the man on the rigs, as well, you know, we can get by with just a...You know, we don’t even do it, they don’t follow policy, you know, they do something that’s a breach of our procedures. And it’s his responsibility if, after talking to the supervisor to call his manager and the manager calls me. And then we get it sorted out.</i></p> <p><i>Researcher: I see, ok.</i></p> <p><i>Respondent: But on the reporting it’s always been our policy, that the HSE manager as a straight line to the CEO”.</i></p>	Respondent 22, O&G Upstream 6
	<p><i>“Researcher: Would you personally agree to have this EHS, this representative reporting to anyone other than yourself in the organization?</i></p> <p><i>Respondent: No, no reporting to me directly.</i></p> <p><i>Researcher: Ok.</i></p> <p><i>Respondent: This is my perception because if, if I allow the position of the person to report to somebody else, I lose the grip of it. So I want to make sure that I’m on top of it.”</i></p>	Respondent 20, Power and Utilities, 5

Sub Theme	Representative Data	Reference
Indirect Reporting	<p><i>“Researcher: with regards to...I mean... I think the structure in the organization here is the most senior representative doesn’t actually report to the head of the organization directly. Or is there some sort of hybrid system, or functional reporting? There is I think a functional reporting, because you have, I think, an EHS committee.</i></p> <p><i>Respondent: Yes, I mean we have. As you know we’re in the middle of operational management system implementation. At the moment we have maybe disjointed functions a little bit in...the fire and safety manage the health and safety, occupational health as well, or the organization. And they report to me. Our environmental affairs group report to a different GM. Both of us report to a deputy chief executive. So from an organizational point of view we haven’t combined all of these under one body. But structurally we do have an EHS committee which is chaired by the deputy chief executive who reports directly to the CE. And our current CE sits in on our EHS meetings as well. And our EHSC committee membership includes all the technical GMs, all the operational GMs plus subject matter experts. So we are bringing all the expertise into one body that reports to our DCE, and that was XXXX you heard speaking today. But structurally, organizationally, no we don’t. Formally we don’t, I don’t what you call it, but committee wise we do.”</i></p>	Respondent 5, O&G, Refining, 8
	<p><i>“Researcher: Do you think that there is, would it be an issue if he reported for example, to operations or do you think that he should report in your mind to the, to the CEO?</i></p> <p><i>Respondent: I think he should as a corporate</i></p>	Respondent 13, O&G Refining, 4

Sub Theme	Representative Data	Reference
Indirect Reporting	<p><i>HSE, he should report to the CEO. Um but again I think this is, you have to look at it by taking into consideration the organization structure of the company. This is important. It's not enough to have corporate HSE er...basically the operating departments; the operations people should have HSE part of the organization. Er...it depends on the size of the company, the complexity of the operations, the...because if you have only HSE as a corporate ya'ani, people reporting to the CEO and they are a separate department in the company, they can never have enough focus on the different areas in the company ya'ani. Say offshore - we have 2 major operating departments. We have one in the yard, yard fabrication, which is a completely different business from offshore operations. And then you have er say er engineering er corporate HSE they cannot er...basically they are there to maybe provide certain guidance and provide for some training, provide for...But they cannot have the needed focus on these different areas and there should be HSE er... call maybe within each operating departing maybe reporting to the, to the corporate HSE and that's fine er...But I see this is sometimes as a failure. You have, you have a unit HSE reporting to the CEO, they live on their own it's a..."</i></p>	
	<p><i>"Researcher: "I see, ok, alright. Um, you have an EHS department?"</i> <i>Respondent: We do, yes.</i> <i>Researcher: Er... I notice actually you have an independent also an occupational health er physician but er so you have an EHS department and does the EHS representative report to you or</i></p>	<p>[Respondent 13, Manufacturing, 4]</p>

Sub Theme	Representative Data	Reference
Indirect Reporting	<p><i>report to a, a different manager?</i></p> <p><i>Respondent: No, um in my organization structure which is there, it is published er... we have, I have subsidiaries and I have general managers and under the general managers we have managers, so he reports to um our administration er managers. So the safety EHS manager reports to the administration.</i></p> <p><i>Respondent: So, under administration we have the stores, purchasing, HR (human resources), training er medical and safety”.</i></p>	

6.3.9.1 Policy of Direct Reporting

In any organisation the flow of information up and down the organisation is dependent on various factors that include the level of transparency in the organisation’s culture, the processes of communicating information and data and the structure of the reporting hierarchies.

The following is an example in which the direct reporting is stressed by this leader. An example here of a policy of direct reporting:

“Of course, but he’s my responsibility, HSE is my responsibility. There can be a lot of shifting and influence given by operational people so, yes, the HSE manager reports directly to me.

And then he further on goes on to state:

“ But on the reporting it’s always been our policy, that the HSE manager as a straight line to the CEO”. [Respondent 22, Oil & Gas, Upstream 6].

It is interesting also that he explains the dual reporting system on sites, in which the EHS person is given the ability through very clear direct reporting to management especially when a risky situation arises.

6.3.9.2 Indirect Reporting

Indirect reporting is generally done through another function or through another body. In this next example from refining an example of indirect reporting and reporting through a functional committee is described:

“As you know we’re in the middle of operational management system implementation. At the moment we have maybe disjointed functions a little bit in...the fire and safety manage the health and safety, occupational health as well, or the organization. And they report to me. Our environmental affairs group report to a different GM. Both of us report to a deputy chief executive. So from an organizational point of view we haven’t combined all of these under one body. But structurally we do have an EHS committee which is chaired by the deputy chief executive who reports directly to the CE. And our current CE sits in on our EHS meetings as well. And our EHSC committee membership includes all the technical GMs, all the operational GMs plus subject matter experts. So we are bringing all the expertise into one body that reports to our DCE, and that was XXXX you heard speaking today. But structurally, organizationally, no we don’t. Formally we don’t, I don’t what you call it, but committee wise we do.”
[Respondent 5, Oil & Gas, Refining, 8].

So interestingly in this discussion, it would seem that this leader felt that there was some degree of dysfunctionality as the management systems are being developed further. However, even then a structure in which EHS is discussed and led from a very high management team (the EHS committee) is a good example of indirect but functional reporting. An advantage of this is that all EHS matters are raised to the committee in which all other senior managers of the executive sit on and therefore the matters receive good attention from everyone.

The next example illustrates the decentralized reporting structures required due to the nature of the business and the structure of the organisation:

“Researcher: Do you think that there is, would it be an issue if he reported for example, to operations or do you think that he should report in your mind to the, to the CEO?”

Respondent: I think he should as a corporate HSE, he should report to the CEO. Um but again I think this is, you have to look at it by taking into consideration the organization structure of the company. This is important. It's not enough to have corporate HSE er...basically the operating departments; the operations people should have HSE part of the organization. Er...it depends on the size of the company, the complexity of the operations, the...because if you have only HSE as a corporate ya'ani, people reporting to the CEO and they are a separate department in the company, they can never have enough focus on the different areas in the company ya'ani. You have, you have a unit HSE reporting to the CEO, they live on their own it's a...” [Respondent 13, O&G, Refining, 4].

Here this leader's argument is that EHS should report to the CEO but because there are so many functions and that EHS should be part of the business. It is likely that here EHS is seen by this leader as a very operational function and therefore keeping a corporate function which is not involved heavily in operations may actually dilute its impact.

In the following last two examples, EHS actually reports into an administrative function within this manufacturing company:

“Researcher: “I see, ok, alright. Um, you have an EHS department?”

Respondent: We do, yes.

Researcher: Er... I notice actually you have an independent also an occupational health er physician but er so you have an EHS department and does the EHS representative report to you or report to a, a different manager?

Respondent: No, um in my organization structure which is there, it is published er... we have, I have subsidiaries and I have general managers and under the general managers we have managers, so he reports to um our administration er managers. So the safety EHS manager reports to the administration.

Respondent: So, under administration we have the stores, purchasing, HR (human resources), training er medical and safety”. [Respondent 13, Manufacturing, 4]

In this organisation, EHS is treated as an administrative shared services function. Here EHS is focused on conducting risk assessments, developing procedures and recommending mitigation measures and personal protective equipment. So the function in this organisation is less tactical and strategic and therefore the EHS manager reports to the head of administration.

Finally an example from the power and utilities, explaining clearly why he believes as a CEO that EHS must report to him directly in the context of his EHS leadership:

“Researcher: Would you personally agree to have this EHS, this representative reporting to anyone other than yourself in the organization?”

Respondent: No, no reporting to me directly.

Researcher: Ok.

Respondent: This is my perception because if, if I allow the position of the person to report to somebody else, I lose the grip of it. So I want to make sure that I’m on top of it.” [Respondent 20, Power and Utilities, 5]

The power and utilities industry in the GCC is generally not as developed with respect to EHS as with high risk industry sectors. However, the impact of incidents in this industry in which workers work with very high voltage systems, transmission in remote areas and direct impact on workers, contractors and the general public makes some of this industry's CEOs want to have a direct oversight of EHS matters.

6.4 Future Outlook on EHS Governance

Other than the themes which have been explored in the interviews with leaders, another semi-structured question which was asked towards the end of each interview was on future outlook and was asked to explore their viewpoints on what they felt would change in the next decade with respect to EHS leadership and governance. Most said that there will be further change;

some said the change will be small but almost all said that there would be a change and that that change has mostly started already.

Some leaders such as one from the Oil and Gas industry was optimistic about change in the region especially with respect to compliance with best practices.

“Researcher: I want to ask you, I mean, in the last 10 years there’s obviously been more awareness with regards to HSE issues in your industry and in the oil and gas industry and this high risk industry in general. Do you think that the, the, this is like a steady change? Er do you think that it’s going to continue this way, in the next say 10 years or is it just slacking off or have you reached the top or is it gonna start going down again or...?”

Respondent: I think, I think a lot of it is going to happen, especially over here, is that the regulatory authorities are going to start using a bigger stick as they have done in other jurisdictions and that will probably continue to drive better compliance. And, certainly the S part, the safety part, I think is well and bred but if you come back to health and welfare of, of some of the crews, it’s awful. And, then if you come back to dear old mother earth, it’s shameful. And yet, the regulations are there already, even here in Oman they’re there. And, some of the things that you find, that we should be doing as an operating business line, talking XXXX wells in general, way, way, way off the mark because there’s no compliance issue, there’s no fines or penalties or people going to jail and things like that. So, I think that’ll be the next big shift over here, is that the, the ministries and the regulatory authorities and so on, will take more of this best practice from around the world and say, it’s about time we change gears, it’s not just a desert.

Researcher: Ok. So, there will be, there will be, probably a step change you expect?

Respondent: Oh, certainly the gradient will change.” [Respondent 21, O&G, Upstream, Page 15].

Another leader from manufacturing stresses the changes happening socio-politically and how those changes will bring about betterment in organizations with respect to social welfare and EHS.

“.....as you know the region is going through a lot of changes now and there is a lot of er pressure groups coming, similar to what is happening in the West. And there are changes, there is a parliament coming and emerging and there is a lot of people who are trying to drive the environment, the health of people, care as well as safety which is part of it. You see now on the papers, you cannot hide anything. If there is a small accident in a small plant then it’s all over the papers and it really gives a bad opposite, if you’re one of the organizations. Imagine if it’s one of the main er companies in one of the states or one of the countries so that doesn’t look good and now everybody is trying to drive that. So I think the change is coming, this is why we’re working ahead of it, to make sure that we are ready for it, if it happens”. [Respondent 16, Manufacturing, Page 7].

So there is a perspective that the social changes in the region will have a positive change impact on EHS in general and strongly related to corporate social responsibility drivers as it would seem. From a leader in the Aviation industry, greater accountability, awareness and investment into EHS is seen in the years to come, a positive outlook but unclear on how fast the change will be:

“I think um from what I’ve seen so far, the really positive sides are, that there’s a general awareness um that um there needs to be leadership and guidance from the top. So, I think there’s awareness, I’m not sure, 100% sure, we know exactly, how to do that, but awareness leadership training, I can see a lot more investment um from the director’s perspective in...actually I think there needs, well first of all, there needs to be honesty, to say, actually we need to get our own backyard sorted out.”

He goes on to say:

“I think that there’s a, there’s a good story to come out of it because we are no longer sitting, you know, just ducking under cover and not doing anything about it, so, um where I, where I, the biggest thing for me, will be, the sign off, of accountability”. [Respondent 25, Aviation, Page 11].

One of the leaders from the Oil and Gas marketing sector, explains that there has already been a great deal of change and that organizations must

make commitments now to save the greater costs of the future in this area of business:

'It has, it has changed and I have no doubt that the laws, regulations of the EHS will continue to be tougher and much harder, so I am personally even convinced that we whatever we want to do our business we want to conduct we have to build in all those expectations when it comes to standards. We should invest from now so later on it will not haunt us and it will be more expensive. So I am convinced that the level of EHS standard will rise in the future and it will be up to the European or the American standards. We are getting to that direction.' [Respondent 4, O&G Marketing, Page 5].

This is interesting as he explains that the investment is required now to prevent future issues that may arise due to EHS issues. And this is a perspective more from a downstream marketing perspective as opposed to an upstream operations perspective.

From the shipping industry, change is apparently coming from the greater need for transparency in the GCC. There is an expectation that the government will increase follow up on codes of conduct of senior persons and that regulations will become more enforced.

"the changes er well transparencies er one of the biggest things that er...that is you know, that is basically highlighted at least here in Oman. Um for example er... there is like for example, transparencies is one of the biggest things in terms of corporate governance and in terms of how people interact and use their position to actually influence er certain, certain things. And us being a government owned company now our own government have realized that there has been a lot of this kind of things. Where people using a position to, you know, influence certain things, whether financially or you know, getting business for themselves. This is all to do with corporate governance and now they're becoming more stringent in terms of, ok, showing what is your portfolio, how did you get this portfolio, as an individual? So I think it's moving towards that direction of being more transparent and you know, um...having these other regulatory bodies to make sure that you are complying with these kind of things." [Respondent 15, Shipping, Page 8].

Another final perspective offers the viewpoint that maturity levels have come about mainly from the separation of roles, and that the Board will have to better direct and ensure they do not interfere too much into the operations of the organization.

"I don't see it changing much, because of the fact, looking at the signs of board where they reached in terms of defining governors, and compliance. And having that, distinct from the daily executive management. I believe there has to be segregation. You cannot create too much grey area on this."

And he then goes on to describe the BoD involvement not recommending too much involvement in his mind:

But I don't see the board getting more involved in the management as that would be a mistake. I think we are seeing the right balanced between the two." [Respondent 3, O&G, Storage, Page 8].

6.5 Emerging Themes/ Concepts

As discussed in Chapter 4, a process was followed to identify from the transcripts discussion points and statements from respondents, which may be linked to some new concepts or at least to ones which do not fall clearly within the 9 themes established through the Literature Review stage. This is significant for two key reasons. First of all, the literature and especially the anchor references focused on best practices either through developing codes or from recent informed opinions from experts and perhaps the views of leaders within organizations are different or there are perhaps other viewpoints which have not been considered. The second important reason is that this research has taken place in a different geographical location in the world to where many of the research and references into EHS leadership/governance has been and is evolving. Such viewpoints therefore provide a regional perspective on what is generally presented as an international set of best practices at times.

Through the process of extraction of statements which had the potential to be either an emerging theme or a sub-theme (i.e. can be classified under established themes) of established themes from the transcripts analysed, 10 groups were created with the following headings and statements ranging from 3 to 14 per Group were collected. The 10 areas are listed as shown in Table 6.17.

Table 6.17 Emerging Areas – Potential Themes

No	Area Title	Description of Area	No of Statements Extracted	No of Potential Emerging	No of Emerging sub-themes
1	Leadership Matters	This is an area where statements relating to leadership in general were very strong, general leadership as opposed to only Safety Leadership Styles.	6	1	1
2	Strengthen the Role of Governance and Oversight – Potential Solutions Cited	These are statements which related to strong views on roles and responsibilities of the BoD as opposed to executives, which related to outlook and critical factors related to oversight matters.	7	4	3
3	Key Challenges for the BoD and Current Realities	What happens in reality with Boards and how it impacts on EHS governance matters.	4	2	2
4	Potential Issues for the Board	Again realities currently existing that seem to make it difficult for real effective EHS leadership to emerge at times.	7	4	3
5	Suggestion – Analysis not monitoring	Strong suggestion to the BoD to change current way of thinking or approach to EHS matters.	2	1	1
6	Alignment, Structure & Reporting Lines	Matters related to organizational realities and facts that impact and be critical for the success of EHS leadership and	9	7	2

No	Area Title	Description of Area	No of Statements Extracted	No of Potential Emerging	No of Emerging sub-themes
		governance.			
7	Suggestion – Perspective of Board	Strong suggestion to the BoD to change current way of thinking or approach to organizational areas that relate to EHS.	10	6	4
8	Key Success Factors for Boards/CEOs for EHS performance	What the Board should do to be a good EHS Board.	4	2	2
9	Industry Realities	Industry specific or macro factors that need to be understood and appreciated as they have a significant impact of EHS leadership and Governance.	14	10	2
10	Holistic Organizational Matters relating to EHS Performance	The function of EHS in an organization and other organizational matters that play a role in driving and maintaining changes.	7	5	1

Appendix K contains all the detailed tables containing the matrix against established themes and emerging themes.

To cluster the newly emerging themes is a very difficult task as they do relate to each other very strongly. They have been listed below and are discussed in Chapter 7. However, in Appendix K, extracting from the interview data, the researcher clustered some of the key strong statements under some thematic areas (referred to in Appendix K as themes). This then allowed analysis to see which of the established themes the statements lent towards. Some statements created interesting concepts or ideas which were listed as emerging themes as they did not fall into any of the earlier established 9 themes.

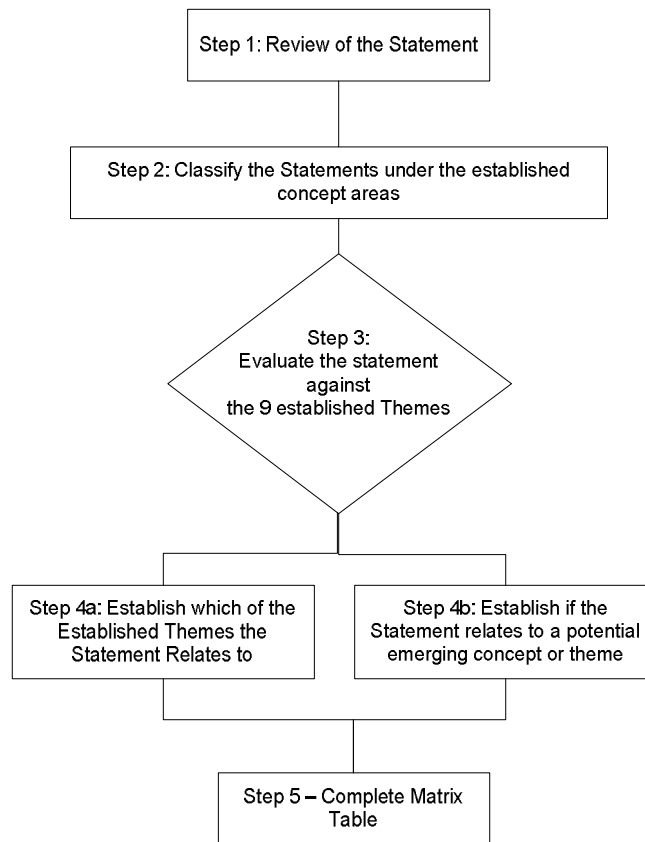


Figure 6.13: Process for establishing emerging thematic concepts and themes

Through this process which is described in the flow chart above we establish some important findings which are very much related to the established themes but are significant enough to be discussed also separately as they have some bearing on this research. Concepts which emerged included:

Directing is a Passive Leadership Style. This means that Boards will have naturally a reactive leadership style. Thus all they can do is inspire and motivate the executive management team to be more proactive when addressing EHS matters. EHS leadership requires a proactive style and therefore the way that boards operate means that it is difficult for their leadership style to be proactive except if they focus more on understanding what the organisation is undertaking to create a proactive EHS culture; how

proactive key performance measures are being set for the organisational leaders to drive them to perform more proactively; and for the board, at a high level, challenge the organisation's leadership to benchmark themselves (through their practices) with industry leader organisations and ones who have a very good EHS performance.

Separation of Roles: To achieve real governance, there should be a clear distinction between managing EHS and directing EHS within an organization. This is discussed further on in section 7.4 in the structure of boards and their impact on EHS governance and leadership.

EHS as Business Value Driver/EHS as a Sustainable Value Driver: EHS needs to be looked at as a business value driver. Thus like quality management, EHS management brings improvements in productivity, sustained growth and prevention of disruption to business. In high risk organizations it is also related to reliability which is a valuable trait for an organization. Provide stakeholders with a feeling of resilience. Moreover, sustainability gives organizations long-term sustained value overtime. As explained by Dermine (2011) when talking of the banking industries corporate governance standards: *"In a world in which financial markets reward short-term reported profits, it is the responsibility of the bank's board to take care of long-term value creation, even it that means hurting reported revenue and the share price in the short term. Executives should drive the business within regulations in accordance with the strategy and manner (ethics/culture) set and supervised by the board."* [Dermine (2011), Page 9]. Thus, leadership must embed EHS into the culture of an organization so it becomes part of the fabric of the organizations goals, objectives and beliefs.

Alignment of Vision: It is critical for there to be alignment of vision between the Executive management and the Board on all EHS matters. There should be a clear alignment between the Board and the Executive Management Team in general and also specifically in EHS matters.

EHS has Competing Goals with Commercial/Financial Drivers/Conflicting priorities in Business: It has to be appreciated that EHS will continue to struggle against at the very least short-term financial goals in organizations, especially for investment and policy issues that may be seen by operational and marketing staff as "restricting". Some conflicting

priorities in business can have very negative effects on EHS. Leadership needs to assess and ensure that risks are not created and EHS in an organization is not compromised. An example of this is extending/stretching maintenance cycles on pipelines to keep them in service as long as possible, risking a possible failure in the line to gain greater short-term value and profits from the asset.

Industry Driving Change and Focus: The industry in itself is driving the standards up as they compete. Safer and environmentally friendly operations have become a basic expectation from all stakeholders in all high risk industries. Good EHS means good business; therefore EHS should be especially in High Risk, High Reliability Organizations is becoming part of the businesses profile. The emerging global and regional influences and trends, international standards and regional practices continue to influence and motivate/drive change within organizations and their practices. This is in general but very much so also with EHS matters.

Financial Investment is required for improving EHS Standards: It has to be appreciated that resources are required to ensure that EHS standards are kept at an acceptable level. The mind-set of leadership be it at the board or executive level should be that EHS is an investment as opposed to a sunken cost just to comply with regulations and standards.

Analysis of Performance Vs. Monitoring Performance: Greater engagement and understanding of the reasons underlying the EHS performance be it good or bad is more important than just monitoring that historical last-quarter performance results. As the Board Members need to add value to the discussion on EHS with the executive team, they need to understand why the performance is the way it is rather than just what it is.

Board Matters in General: Such as Board Structure; Having a structure that ensures objectivity; Structure less important than engagement of Board Members and the Board dynamics; Make up of Board ensuring there is a good mix and that there is Diversity of experiences and knowledge and that; whilst organizational maturity governs Boards at the end of the day the Board *Oversight Role* must be very strong. One particular aspect mentioned was the internal controls vs. regulation; i.e. having good governance through

internal management systems and processes should be the focus rather on compliance to regulations which is a given.

Social Impact & Accountability: This was discussed in the literature review, but what was highlighted is the growing impact of socialization and social value contribution of organizations and corporations especially in the GCC states. This is consistent with the issues identified by Jamali et al (2010) (and others) regarding the lacking good practice corporate social responsibility governance in the profit making organizations as opposed to the not-for profit organizations, although their research focused on the medical services sector. The Business needs to take into account people's needs for both external and internal customers (i.e. market and employees).

Continual Learning Organizations: Learning and EHS awareness and competence should come from an environment of continual organizational learning going from top to bottom in an organization.

Transparency: Transparency is key to having a healthy working relationship between all stakeholders including the workforce, the management team, the leadership team and the Board of Directors.

Preparedness of Organizations – Resilience: Preparedness ensures both Business Continuity and Emergency and Crisis Response Planning. Whilst it is recognized in the interviews that focused efforts should be on prevention, being prepared is equally important.

Ethics & Morality of Leadership: Whilst this may be a very straight forward point and there is great agreement on this, it is a very fundamental aspect of creating trust between stakeholders which is critical for a good safety culture.

Independence and Strength of the EHS Function within Organizations: Within an organization, the EHS function must be independent of other functions and report to the right level of command in an organization, preferably the highest level within the organisation.

6.6 General Data Analysis Conclusions

In these two chapters 5 and 6, the data and data analysis has been presented. The inquiry using both methods produced a richer picture overall. The descriptive statistics were able to identify the areas/themes of most

importance/agreement (monitoring of EHS performance) and least agreement (risk management) with respect to board involvement in EHS governance.

Likewise from the quantitative results the differences between perceptions between oil and gas and non-oil and gas sectors of industry revealed differences in approach and perception with respect to operational excellence and management systems and risk management.

The qualitative review gave however this research significant depth of meaning and insights. Whilst many of the response on certain questions relating to the themes were expected, many leaders also added a great deal of insights into what was happening in their organizations and industry in general. The influencing factors or even themes that also emerged (whilst were also related to the themes that evolved from the literature review), gave insight into what was driving change and what was seen as important.

The emerging themes described in section 6.5 were very interesting to analyse. The discussion on board structure and its potential impact on EHS is given in the next chapter.

6.7 Reflections of Researcher on Data Analysis using Mixed Methods

The application of mixed methods research I found extremely useful. I enjoyed exploring the development of mixed methods research design as a methodology. The literature is relatively recent and I found that such a pragmatic approach can help in gaining greater access to different perspectives. What I also enjoyed is reviewing and comparing the data from both the qualitative and quantitative methods which were employed concurrently.

I enjoyed developing the survey instrument and validating it through using the subject matter expert panel. Although by the time I developed the survey I had completed most of my literature review, I was motivated to continue

reading as a consequence of some of the dialogue that I had with those who helped me conduct the validation exercise. As I work in this field I also continued to refine the areas and questions I eventually used in the semi-structured interviews. I was concerned at one point that I may get saturated with the data from the interviews, and although I undertook 29 interviews, I still feel I would have continued to enjoy the dialogue with these leaders on EHS leadership and governance matters.

The mixed methods did help in giving in this research work greater context as exploratory research. The development of the quantitative survey was assessing comparatively perceptions of senior managers/organizational leadership to the emerging themes from the literature review. But greater insights were given by the quantitative enquiry.

As far as instrument development is concerned, the use of the methods concurrently also served the quantitative method as a secondary validation, which will allow in the future for the refinement of the survey tool. I also believe that using mixed methods helped greatly in addressing the different research questions, aims and objectives more effectively. The perception-based survey enquiry using the quantitative method allowed for better understanding of perception of importance of the themes and degree of agreement, whereas the qualitative enquiry gave a richer and deeper picture and also explained why at times there are completely opposite perceptions from different survey participants when certain questions were asked. Regrettably, the nature of this research in terms of the number of senior leaders that can be accessed meant that I did not get enough quantitative data to run meaningful inferential statistics for analysis.

I think I will continue to use mixed methods in future research where it may help in gaining insights where appropriate.

Chapter 7 –Discussion

7.1 General Introduction

The Gulf Corporation Council States (GCC) in the Middle East have seen great industrial and economic development over the past 60-70 years and whilst many industries are young relative to the many industries in the West, they have developed rapidly driven by a thriving dynamic oil-based economy. This research explored EHS leadership with respect to corporate governance in high risk and high reliability industries. Many of these industries as discussed in previous chapters are generally owned by state governments. Moreover, many of these industries are very important socio-economic entities with respect to these countries.

The exploration using a concurrent mixed methods design was important to confirm the significance and importance of various themes and sub-themes that emerged from the literature search. It is maintained that much of this research in this area of EHS leadership in the context of corporate governance is relatively young (as discussed in chapter 2). Therefore at the outset of the data collection, it was considered likely that new themes or sub-themes would emerge. The literature review was wide-based in that it reviewed both academic and professional publications which emerged from more Western and references. It was therefore imperative to seek to understand more how much these emerged themes were applicable to the GCC states. It was also equally important to seek from the viewpoints of senior leaders within these organizations if there were other important themes and areas to understand.

In chapter 3, a model is presented based on the themes that emerged from the literature review. At a later stage and during the qualitative enquiry sub-themes emerged under these key 9 themes and these have been extensively discussed in Chapter 6. Furthermore, after the qualitative analysis, a further

set of potential emerging themes from the interviews were also developed. These were then later incorporated, or in fact more accurately integrated in to the model initially developed. This model is presented in detail at the end of this seventh chapter.

In this chapter the discussion is presented in five key sections. Initially the themes that evolved from the Literature review are discussed from the data collected and analysed. Subsequently, the key theme related sub-themes and also the emerging themes which evolved from the interviews with senior leadership are discussed. Thirdly, feedback on the impact of board structure on EHS leadership is then explored as it was felt that this was, in the context of corporate governance a significant matter to study. An emergent Contextual EHS Leadership and Governance Diagram is presented to explain the areas that emerged and more significantly later a model of EHS Leadership is then presented and discussed. This draws upon the initial conceptual diagram discussed in the introductory chapter and the Model post-literature review in chapter 3 of this thesis and it seeks to inform on the emerging areas of the diagram and model with the themes investigated through both the literature and the empirical components of the study. Some of the significant findings with respect to the future outlook of EHS leadership are also discussed.

This final *Model of EHS Leadership and Governance* connects all the themes under groups and explains how these themes relate to each other and more significantly how they drive monitoring EHS performance and risk management.

7.2 Exploring the Applicability of the themes that emerged from the Literature Review

In this section the themes are discussed in order of their average frequency throughout the interviews. This section also explains the importance of understanding further the sub-themes that emerged from a more detailed interrogation of the qualitative data. This does not indicate their rank of

importance but identifies which themes may be more of an influencing effect on EHS leadership/governance matters in general.

7.2.1 Developing Safety Culture and Communications

A total of 7 sub-themes evolved from investigating this important theme. They include:

- Leadership Creates a Culture and influences/sets agenda for change
- Reporting, Transparency and “No-Blame” Culture
- Changing the behaviours is key to changing the EHS culture
- General EHS Culture where EHS is a Value
- Compliance & Consequence Management:
- Moving from High Risk to High Reliability organizational EHS cultures
- Culture development through learning organizations
- Impact International Standards and the Size of Organization

The importance of understanding the sub-themes in all the analysis undertaken brings about both a greater understanding and appreciation of the matters that influence leaders in demonstrating actions within this theme.

In contrast to the literature an EHS culture is seen as an organizational matter and the interviews showed many statements that related to; (1) A culture of rewarding safety; (2) no blame culture; (3) first item of discussion in a meeting; (4) behavioural based safety programs and so on. However, it would seem that whilst many of the senior leaders spoke about having a culture of EHS within their organizations, it is clear but for very few leaders from more internationally-based organizations, that this culture was being driven at their executive level rather than that the BoD.

However, in saying this many leaders did say that the BoD were generally supportive of efforts that the executive management exerted towards developing a culture of safety and EHS. They set the overall direction for the organisation either directly (or explicitly through expectation setting) or

indirectly (more implicitly through seeing EHS matters as an integral part of performance). One matter which evolved from the interviews was the clear influence of international best practice standards especially in larger organisations which maybe based regionally but operating in a more international environment.

7.2.2 Safety/EHS Leadership

Under this theme and upon a closer interrogation of the data, 5 sub-themes evolving which included:

- Demonstrating Safety/EHS Leadership
- Board Leadership vs. Executive Leadership
- Visible Leadership
- Making Safety/EHS a Core Value
- Safety/EHS being driven from the Top

It would seem that much of the Safety/EHS leadership seems to be mainly driven by the CEO and his executive team. Senior leaders saw, in general, the role of the BoD as being more supportive rather than directive when it came to EHS matters as they cited many examples of an operational nature. They reverted in many interviews to giving examples from the working level which seems to indicate that they see many aspects of EHS as operational rather than strategic. It also may mean that they found it easier to articulate examples of EHS matters more in an operational context.

In saying this some recognized the power, especially within the GCC which has a very traditional tribal culture that the leadership words and actions went a very long way into influencing change. EHS culture and leadership are highly related and in many of the statements many leaders implied that good EHS leadership was demonstrated in an effective EHS culture; with transparency; high levels of commitment through visible leadership from managers and workers alike; a shared vision and belief in EHS as an important core organisational value throughout the organization and so on.

What is also fundamental is that it was recognized that EHS leadership played probably the single most important factor in creating a safe and reliable organization.

7.2.3 Influence and Accountability

More than half of the statements analysed in the interviews related to these three top themes, *EHS Leadership*, *EHS Culture & Communications*; and *Influence & Accountability*. Senior leadership expressed very strong views on this. Whilst many of them felt that ultimately they would be accountable for EHS incidents they did explain (and with some citing specific examples) that they would be held accountable for wilful negligence. In the survey two direct questions were asked: (Q6) *Each Board Member needs to appreciate that their actions/decisions (where applicable) should reinforce the health and safety policies and statements with no contradiction* and (Q7) *The CEO/MD should reinforce directives given by the BoD even when they may not be aligned with the Health & Safety Policy*.

There was a marked difference with the level of agreement to Q6 and Q7 for the O&G Group where they were in agreement with the BoD having to appreciate their actions/decisions whereas there was less agreement with the CEO/MD accepting and reinforcing BoD directives which were not aligned with the policy. That difference was not seen with the responses of the non-O&G Group. This may be better explained with the greater level of autonomy, empowerment and accountability that senior leadership feel in the Oil and Gas sector which is perhaps more self-regulated than other non-oil and gas industries such as shipping and aviation. Regrettably due to the relatively small sample size (30 respondents) it was not possible to test significance using the t-test (comparing the means) between the two groups.

In the interrogation of the qualitative data four sub-themes evolved under this theme emerged:

- Notion of Accountability
- Accountability cannot be delegated
- Stakeholder Influence on Accountability
- Board Accountability

Generally a good discussion emerges in many of the interviews which identify the great challenge of where accountabilities lie between the more “collective” board and the more “individual” CEO/MD. It is this grey area which makes this research so significantly important. In the making of high reliability organisations the clear partition of board and executive leadership actions is at the very foundation of this EHS leadership and governance debate.

This is consistent with both the literature [Roy (2010); Kadir (2010); Ahmed (2008); Anderson (2008) and Roger et al (2009) etc] and the statements coming from the interviews where the research participants all indicated that accountability and responsibility was with the senior leadership including the BoD. However, this area remains somewhat grey as many senior leaders also saw ultimate responsibility/accountability with the CEO/MD. The differences in views are explained by three aspects: (1) BoD is responsible and accountable for governance as opposed to CEO/MDs who are responsible for action; (2) there are differences in opinion with respect to the board’s collective responsibility rather than individual responsibility (perhaps once again influenced by a more Eastern collective culture rather than a more individualistic Western one); and (3) many CEO/MDs expressed their discomfort with BoD members involving themselves with some of the “day-to-day” decisions, therefore those who saw EHS more as an operational matter supported a clear distinction in the roles, especially when they also indicated that the BoD members did not understand enough about the business.

Ultimately, one of the emergent aspects for the interviews, especially with respondents who supported a detached board structure (which will be discussed later on) is the separation of roles and delineation of the roles and responsibilities insisting more on the accountability of the CEO/MD and

limiting the accountability of the BoD to being effective in their “governance and oversight”.

When contrasting influence and accountability with the legal imperatives for safety/EHS it is felt that these are strongly related and this will be discussed further. Ultimately influence and accountability seems to sit between *setting performance standards* and the *heart of the conceptual diagram* which is discussed in Figure 7.2.

Moreover in the emerging model the relationship is explained by the fact that morality which is a personal factor interacts with legal imperatives for EHS which is a more socio-economic (external) factor on the organisation.

7.2.4 Monitoring EHS Performance

In Chapter 5 (table 5.2) the descriptive statistics showed that the 4 most agreed with questions (Q13, 23, 24 and 27) all had one common theme related to all of them which was Monitoring EHS Performance. It would seem with respect to the BoD almost all senior leadership agreed strongly on the core role of oversight through monitoring EHS performance.

Upon further interrogation of the qualitative data, three sub-themes emerged:

- Effectiveness of Monitoring EHS Performance
- Frequency of Monitoring EHS Performance
- Expectation /Standardization from the BoD on Reports

From the interviews conducted more than 10% of the statements analysed for themes related to monitoring. Boards are seen to be getting more and more involved today with growth in awareness of the importance and impact of EHS. In saying this many senior leaders even saw this role as limited due to the lack of knowledge and competence of directors in certain organizations. This it was very clear impacted on the “effectiveness” of monitoring. To say this is to say that many respondents explained that whilst boards monitored EHS performance, in them doing so they added limited value.

The general variation in reporting trends (frequency of reporting) within these industries and in fact within the same industries in the GCC vary from reports being issued weekly and a board meeting monthly to reports being issued monthly and board meeting taking place 2-4 times a year. The reporting is generally part of the practice of all senior leaders and their boards. This is seemingly an established culture and many leaders said that this was a standard practice in the industry to give the board some assurances through (mostly standardised) effective periodic reporting.

From the discussion with leaders from the Oil and Gas sector, some commented on the importance to go back to process safety management related indicators rather than personnel safety indicators. They have recognized that the focus on lost time incidents and other such lagging indicators added less value to helping boards appreciate the level of effort and resources that are required to sustain high performance and lowered incidence rates. Some said that proactive key performance measures and what is termed “leading” indicators was much more important to link effort with higher EHS performance.

It is to be appreciated here that boards in most organizations get involved in EHS when something goes wrong and they want to understand what went wrong and what is being done to both deal with the consequences and prevent reoccurrence; when they are asked to approve large budgets in order to spend to improve EHS or otherwise; when presenting performance data for the last reporting period. When there is focus on reactive KPIs rather than proactive KPIs the perception of EHS becomes somewhat of a negative issue focus area.

This must change in the future because if the board is to play a more positive active role it has to play a more proactive role advising and supporting the executive leadership as noted by various scholars [e.g. Kakabadse & Kakabadse (2007); Nicholson & Keil (2004) etc.] It must also base its expectations of the executive on proactive performance in EHS and recognizing the efforts made in preventing incidents. On the other hand their

role must also be focused on motivating management in their development of organizational resilience, effective sustainable growth and more effective organizational EHS cultures through EHS leadership.

7.2.5 Risk Management

The common theme related questions most leaders disagreed with or least agreed with (Q12, 17, 20 and 21) are given in table 5.2, and related to risk management. As questions related to leadership and board risk management strategies and practices it would seem the differences in opinion and outlook when compared to the literature review emerging best practices [e.g. Delliotte (2008); O'Conner (2012); Dufort (2) (2013) etc.] and this reflects the difference in the approach and practice of different industries in dealing with risk management and control. As discussed in Chapter 5 it would seem for the analysis of data that there may be currently greater understanding and acceptance of enterprise risk management models in the oil and gas sector as opposed to the other industries.

Again this may be related to the fact that the oil and gas sector is more accustomed to being, due to the development of the industry over the years, more self-regulating compared to other industries especially the maritime and the aviation industries which are highly regulated and controlled. As such they developed their own internal risk management systems and were more comfortable with managing risk in the context of the board and executive management through high level enterprise risk management strategies and processes.

When the respondent feedback was interrogated more closely three sub-themes seem to emerge which include:

- Risk Awareness
- Risk Appreciation
- Risk Tolerance

It would seem (logical) that boards are interested in risk and understanding how they are generally being managed. However, once again the impact and the normal or best industry practice, in that industry is what drives the risk management models. This is however highly dependent on the level of both risk awareness and appreciation.

To this end and from the data collected and analysed it would seem that because EHS risks are technical in their nature, the engagement of BoD members in addressing or discussing those risks is not significant. However, when looking at the overall exposure of an organization, directors look to be comforted that a certain system is in place and functioning effectively to mitigate risks, be they EHS or otherwise.

It would seem also when comparing this with the literature review on enterprise risk management (ERM), when EHS risks present themselves as credible business (and business continuity) risks a greater board interest and thus risk appetite is overtly expressed.

7.2.6 EHS Awareness, Knowledge and Competence

It is interesting to see that more than 50% of the respondents supported mixed board structures (where the CEO/executives are also board members). One of the key elements behind this was clearly that the leaders felt that this brought about greater alignment, and as will be discussed in greater length later, it is about the knowledge and competence on EHS matters that executive board members bring to the table which leaders felt was important. Two sub-themes came about in further analysis of the statements made during the interviews and these included general awareness and the induction (On-Boarding) programs that organisations provided or at least needed to provide to board directors.

Consistent with Van der Westhuyzen (2012) who spoke about monitoring, control against set performance standards and expectations it would seem that a good number of leaders see the onus on their organisation to prepare

the board directors to understand their business . There is no doubt that knowledge and competence is required in both setting the performance standards and monitoring effectiveness.

This must be a serious area of concern in this research as on the whole and regardless of which industry was being addressed, the level of EHS knowledge and competence with the directors was limited to the extent that, in the minds of the leaders, that they added limited value to the overall effectiveness of risk management, monitoring and advising on effective control. However, the industries are taking effective steps to address this by arranging for induction programmes for (at least) new directors which include detailed operational overviews and EHS in various organizations. Certain companies like one oil refining company went to the extent of running a one-day workshop which had a significant component about EHS.

Finally, it is important to appreciate that leaders recognize the need for knowledge and competence and even if the chairmen of boards do not directly ask for it, consistent with the above some of the senior leadership are proactively arranging for induction and awareness programs. And to this end, the fact that between 15-19% of respondents saw that board structure made little difference to EHS leadership; they supported this by saying that it was more dependent on the diversity and make-up of the board. Some of the leaders interviewed basically said that if you had directors who had some industry knowledge and an operational/EHS background, they would be able to contribute more effectively to EHS matters. This is discussed further on in this chapter.

7.2.7 Operational Excellence & Management Systems

In a similar way to the responses on risk management, the variation in responses apparent in the quantitative data analysis may be explained by the fact that this is viewed as more of an operational level matter rather than a strategic matter for the board.

Moreover, this is apparent in the significant difference when comparing the O&G and non-O&G industries. Once more this can be attributed to the fact that oil and gas is more self-regulating and that the development of a more mature EHS management systems aspiring to excellence was a result of more broader and general and less prescriptive laws and regulations (as compared to maritime, aviation and manufacturing or even the construction industries).

However, as discussed in chapter 2 the development of management systems is critical to the development of high reliability organizations. Respondent 6 gave a very detailed explanation as to how his organization developed their operational excellence model over time and how it was built on a set of beliefs and principles. Interestingly in some organizations many of the EHS management systems are built on management system elements. They refer to them in different ways or call them different names. For example, VOPAK the Dutch-based oil and chemicals storage company calls them “*Fundamentals*”; Chevron the Oil Major calls them “*Tenants*”. Petroleum Development Oman (PDO), the Sultanate of Oman’s national oil company calls them their “*Golden Rules*” and the Dubai based diversified oil and gas company, the Emirates National Oil Company (ENOC) refers to them as their “*Principles*” to name a few examples.

Overall the qualitative interrogation of the data evolved five sub-themes:

- Operational Excellence
- Systems Thinking
- Beyond (Legal) Compliance
- Consequence Management
- Best Practice

Operational excellence was explained by means of an integrated management system which looks at asset integrity, operational discipline and high standards of embedded EHS processes and procedures. Here the

policy drives much of the management system elements founded very strongly as discussed in the literature review of fundamentally leadership.

The systems thinking was related to organisations believing in a fully disciplined and structured approach towards implementing management systems that obviously due to the risks involved EHS. It is interesting to note that this systems thinking leads to a “beyond compliance” paradigm. It is based on setting an internal set of standards and working towards meeting them for the purpose of safe and reliable operations, rather than due to legal regulations and requirements.

Moreover, generally with almost all of the senior leaders interviewed, the foundation to their EHS assurance came in the form of a management system of some sort. It is critical to note four very important aspects which came about from the interviews, in the sense they would most probably agree on:

- (a) Having processes and procedures in place was fundamental to having an effective EHS performance with none or fewer incidents;
- (b) Compliance to the rules, laws and regulations sets the minimum benchmark which you cannot go below. But your industry standards must be higher because they have the latest information drawing on the many lessons from industry;
- (c) Setting rules and standards within an organization creates the operating envelope for everyone to work within and just like a state sets rules and regulations to maintain law and order, an organization sets EHS policies and procedures to maintain operability, stay resilient and sustainable, especially if it is a high risk industry.
- (d) Larger organizations (Holding Corporations) have developed guidelines and codes of practice for all their operating units (affiliates) to bring about a good level of compliance and operating discipline with all of their operations.

But what was also emphasised is that excellent systems required a firm and fair consequence management process in which if people did not comply they were counselled, warned and fired. It was emphasised that without this systems could not achieve excellence.

One important aspect in the development of management systems which we see is that the policies, procedures and guidance have become more dynamic in that it continually is upgraded and changes to meet with new and emerging risks. Best practice defined by industry benchmarks and practices drive much of the journey towards excellence. Excellence by definition means that compared to industry norms, organisations were not only meeting higher standards, but that they had systems in place that created continual improvement. Road safety is a case-in-point and was discussed by more than one senior leader, especially an issue in the Oil and Gas upstream sector where they explained how they have exerted a great deal of effort as an organization to study the underlying factors and through engineering, administrative, policy and procedural controls to eliminate the risks. In the GCC, from discussing this issue with various leaders, poor road safety is the number 1 cause of fatalities in that industry.

7.2.8 Legal Imperatives for Safety

Regardless of which industry you belong to, senior leaders recognize the significance of the legal imperatives for safety and EHS. As discussed earlier there is an interesting relationship between legal imperatives and operational excellence & management systems and risk management. Clearly they are strongly linked as the management systems would be developed on the basis of the minimum legal requirements and as an assurance mechanism for the leaders that the procedures are in line with the legal requirements within a jurisdiction.

In saying this leaders explained that they ensured that their organization applied whatever systems helped in making their operations effective, efficient and safe; ensuring only that they did not go below the legal

requirements. They said that legal aspects become extremely important after an accident or incident because in any major incident in which people lose their lives or are injured, the environment is damaged and/or assets are damaged; it has to be appreciated that it is as much an operational and financial, perhaps reputational loss as is a EHS or safety omission. Legal compliance is important in keeping a business healthy and running without losses. Two sub-themes emerged in this analysis which included:

- Core Business Conduct Imperative
- Basic Compliance

Legal compliance was related in the interviews to business conduct. The leader's moral duty to protect company employees was something that was a given from the responses of many leaders. But at a more basic level, compliance is critical to business from a "licence to operate" perspective.

As discussed somewhat in the literature review is the fact that many of the legal debates suggest that there are two dichotomous approaches [reference to Grey (2006)] to the management of the legal non-compliance especially in occupational health and safety. The two schools of thought of either (i) self-regulating for compliance or (ii) policing; it is not as clear when the discussions took place with the senior leaders if they saw this as just compliance and do not discuss such matters then it comes to the law. Perhaps this reflects the level of involvement that major industries, even if regionally owned, in the development of regulations and standards. As such the leaders did not see themselves and their organizations as stakeholders in these regulations as much as they saw themselves as just having to ensure they complied. Industry generally in the GCC is not always consulted on laws, rules and regulations (by the regulator) as they may be for example in continental Europe. This is however, starting to change.

With the above in mind, legal imperatives for EHS remain a compliance issue related to the organization's license to operate. It is a bare minimum rather

than an aspect which drives best-in-class EHS leadership and organizational EHS cultures.

7.2.9 Reporting Structures and Hierarchies

Finally, the last theme seems to have been less important but also quite straight forward. Two sub-themes emerged from the qualitative review, being Policy of Direct Reporting and Indirect Reporting. Clearly when asked the question on the reporting line of EHS managers/directors with respect to the senior leadership there were three types of generally varied responses:

- (1) They must report to the CEO/MD directly – as some of them put it “*I am ultimately responsible for EHS*”;
- (2) They can report to one of the CEO/MD’s senior technical or operational executive management team, as they said they have a system and there is good transparency.
- (3) They have to really report to the CEO/MD because this sends a message to the whole company and the other executive that safety is at least at par with other aspects of company operations.

Whilst reporting lines are an important aspect to understand and appreciate it can be said that the impact on EHS leadership as such is not as significant as with the other themes. But this might be dependent on the maturity of the or otherwise the current structure of an organization. Thus if an organisation has a mature operating system and the roles and responsibilities for EHS are clearly defined in all jobs other than only the EHS practitioner’s job then the reporting lines may have certain flexibility. Reporting lines are important to ensure that the correct information is received by the organisation’s leaders in an accurate and timely manner.

To conclude here the issue of direct and indirect reporting of EHS depended on the governance imperative of the organisation’s structure when it came to EHS. The organisational leaders who seemed to see EHS as a more strategic or at least tactical matter preferred the direct reporting structures so

as it would seem that they wanted to lead EHS and be directly informed or at least place EHS in a level that others within the organisation appreciated that it was important to them.

7.3 Exploring the Applicability of the themes/ideas that emerged from the Interviews Conducted

As explained in Chapter 6 (section 6.5) various emerging areas through some of the statements were felt to be highly significant to the extent that they may very well be a theme in their own right. One of the primary objectives of this research was to ascertain if the emerging themes from the literature review were applicable, and also to understand what other important and influencing factors existed in the minds of the leaders. One clear drawback of much of the literature references which exist (which addresses EHS leadership) is that much of it has been a contribution of EHS practitioners, governance specialists, legal specialists and so on and whilst many perspectives were explored this remained limited in the sense that perhaps the senior leadership perspectives have not had a fair hearing. Whilst there have been publications which have gone through significant consultation with senior leadership [OECD (2012), IoD-HSE (2008) etc] as concluded by McDonald (2010), to cite one example, the disappointing reality is that the surveys conducted on UK directors on the HSE/IoD 2008 code over two years showed little improvement in awareness, readership and implementation of the code. So it may be argued that whilst they were given opportunities to review and comment, many senior leaders may not have invested the time to do so. Therefore, how much of their input guided these standards remains to be questioned.

To this end, this research explored directly and through the qualitative inquiry what other emerging themes or ideas these leaders held. During the interviews the views raised have been varied and these were listed in Chapter 6 and are discussed in greater detail here.

Some leaders said that boards will have naturally a **reactive leadership style** as directing is a **passive leadership style** in which they will react to the information presented to them on performance. Thus all they can do is inspire and motivate the executive management team to be more proactive when addressing EHS matters. This is not so much a criticism as much as it is a reality which has evolved through the workings of boards. As discussed earlier some boards are more active and meet more frequently, and as such it is believed that those boards probably have a more **directive and influential style**. But as noted by Clarke (2012) effective safety leadership requires both transactional and transformational leadership styles to be effective.

The **separation of the roles of the board and the executive** was argued by some leaders as being the only way to achieve real governance. There should be a clear distinction between managing EHS by the executive and directing EHS within an organization by the chairman and his/her board of directors. This is consistent with Millstein and MacAvoy (2003) who proposed a separation between the role of Board and Executive, a view shared with Nicholson & Keil (2004) and others.

The concept of **EHS being a Business Value Driver** was discussed and many leaders explained that EHS needed to be looked at in a different way perhaps akin to quality management within organizations, EHS management in their minds brought about improvements in productivity, sustained growth and prevention of disruption to business. In high risk organizations it is also related to reliability which is a valuable trait for an organization which provides stakeholders with a feeling of resilience. As such some leaders therefore felt that embedding **EHS as a Key Organizational Value Driver** was required by the leadership so as for an **EHS Culture** to grow and an organization becomes part of the fabric of the organizations goals, objectives and beliefs.

Thus in a very similar way **EHS as a Sustainable Value Driver** was also discussed and some leaders said that sustainability gives organizations a

long-term sustained value overtime which is one of the long-term objectives of a board. In a recent research presentation in India for the Oil and Gas Industry, research showed that *“Governance sets a long term destination whereas leadership sets the road map for the set coming period under direction of BoD”* [AlHashmi (2013)⁴, slide 14]. The sustained existence, operation and growth are all very important aspects of EHS assurance. As explained by Dermine (2011) when talking of the banking industries corporate governance standards: *“In a world in which financial markets reward short-term reported profits, it is the responsibility of the bank’s board to take care of long-term value creation, even if that means hurting reported revenue and the share price in the short term. Executives should drive the business within regulations in accordance with the strategy and manner (ethics/culture) set and supervised by the board.”* [Dermine (2011), Page 9].

On matters of EHS leadership effectiveness many senior leaders explained that it is critical for there to be alignment of vision between the Executive management and the Board on all EHS matters. This would naturally also deal with another important aspect or theme which emerged which is when ***EHS has Competing Goals with Commercial/Financial Drivers***. It has to be appreciated that EHS will continue to struggle against financial goals in organizations, especially for investment and policy issues that may be seen by operational and marketing staff as “restricting”, and expenditure with returns very difficult to quantify in traditional financial return on investment terms.

This in turn creates conflicting priorities in Business. Some conflicting priorities in business can have very negative effects on EHS. An example of this was deferring maintenance works on a pipeline to save costs, and the pipeline failing as a result of corrosion. Leadership needs to assess and ensure that risks are not created and EHS in an organization is never compromised. This is sometimes a challenge as even the most accurate quantitative risk assessments can be based on quite subjective assumptions due to the nature of risks which are related to failure rates of equipment (e.g. mechanical seal failure on a pump), natural factors (such as storms and

earthquakes etc.); and human factors (i.e. human error borne from another varied set of factors including lack of training, fatigue, underdeveloped safety culture etc.).

A very clear factor which emerged from the discussions especially within the Oil and Gas upstream and the Aviation sectors was that it was a fact that Industry was in itself driving change and focus. The best practices employed as a result of lessons learnt from different incidents and accidents or as a result of more proactive technical research, and the basic fact that all these different companies compete with one another in delivering services and products to other business or to the public directly. All of this has had a profound introspective focus shift towards better EHS standards. In oil and gas for example a few of the leaders interviewed said that the focus of the industry on process safety management in recent years has come about as a result of recent international business crippling incidents which highlighted to management that they have been too focused on personal safety and have neglected plant and process (hardware) safety.

Therefore the emerging global and regional influences such as trends, international standards and regional practices continue to influence and motivate/drive change within organizations and their practices. This is in general terms, but very much so with EHS matters.

The amount and timeliness of financial investment which is sometimes required to improve EHS Standards has to be better appreciated by leadership at both the executive and board level. During the pilot work done and during a discussion with a senior legal advisor who participated in the pilot study, he had explained to the researcher that in the upstream oil and gas business where he came from if a CEO needed to spend up to 10 million US Dollars of an urgent safety or EHS issue, he had a blanket approval to do so as long as he was able to justify the expenditure at a later date to the BoD. He explained that whilst the delegation of authority for unbudgeted expenditures was only 1 million US Dollars in cases of EHS requirements the

board appreciated that resources needed immediate deployment and could not wait to prevent any incident or escalation of any incident.

Monitoring EHS performance has been already discussed in the previous section. However, what was highlighted in the discussion with leaders was that the **Analysis of Performance** was hugely important by the board rather than just monitoring. Greater engagement and understanding of the reasons underlying the EHS performance be it good or bad is more important than monitoring that performance. As the BoD needs to add value to the discussion on EHS with the executive team, they need to understand why the performance is the way it is rather than what it is.

On board matters in more general terms the board structure that ensures objectivity and has the right level of knowledge and healthy working with the leadership teams was very important. The structure is seen by some to be less important than the engagement of board members and board dynamics. The makeup of the Board ensuring there is a good mix and that there is diversity of experiences and knowledge and that was supported by almost all respondents who probably saw that as the single most important aspect of board effectiveness in dealing with EHS matters. Whilst organizational maturity governs boards at the end of the day the board oversight role must be very strong.

The growing impact of Socialization and Social Value contribution of organizations and corporations is consistent with the issues identified by Jamali et al (2010) regarding the lack of good practice and corporate social responsibility governance in the profit making organizations as opposed to the not-for profit organizations. Although their research focused on the medical services sector, the matters related to **Social Impact & Accountability** have become important and in the GCC and the Arab world in general, this has become a matter of significant socio-political importance with a growing demand for governments to create employment opportunities. However another important aspect highlighted was the alignment of the

organization and the business and for them to take into account people's needs for both external and internal customers.

Learning and EHS awareness and competence should come from an environment of continual organizational learning going from top to bottom in an organization. Therefore the development of **Continual Learning Organizations** is very important which leverages on knowledge from its internal operations and lessons learnt as well as peer industries both locally and internationally.

There should be a clear set of expectations for Safety and EHS at all levels starting from the board. Also leadership explained that good EHS means good business, therefore EHS should be, in the context of high risk, high reliability organizations, part of the business profile.

Transparency is critical to having a healthy working relationship between all stakeholders including the workforce; the management team; the leadership team; and the board of directors. As discussed earlier some leaders explained that transparency creates that safe and reliable culture and that it was leadership who created that culture of transparency by being fair and just. This is also consistent with a great deal of safety leadership and culture research [Odea & Flin (2001); Conchie & Donald (2006); Carrol (2002) etc.]. For example the BP Texas Refinery Explosion Investigation yielded, Baker et al (2007), Page xii; in their report it states *"A good PSM culture requires a positive, trusting and open environment with effective lines of communication between management and the workforce, including employee representatives"*.

Resilience is a very important aspect of high reliability. The level of preparedness of organizations to ensure both business continuity and emergency/crisis response planning was something that leaders said boards must expect of leaders of high risk organizations as a key expectation and objective. It was recognized in the interviews that focused efforts should be

on prevention, but being prepared to respond to incidents and having action plans in place was equally important.

On compliance matters the oil and gas leadership seemed to talk more about the importance of internal controls and management systems. Having good governance through internal management systems and processes should be the focus rather on compliance to regulations which is a given fact.

Some leaders touched on the fact that ***ethics and morality of the leadership*** is significant. The leaders interviewed from the construction industries said that this was a very significant aspect as they were competing with other contractors who may not have such high levels of morality and who may not as such treat their workers as well to simply cut costs and be more competitive in tenders. Whilst this may be a very straight forward point and there is considerable agreement on this, it is a fundamental aspect of creating trust between stakeholders which is critical for a good EHS culture.

Finally the ***Independence and Strength*** of the EHS Function within Organizations was discussed by some leaders especially when it came to talking about reporting lines. The EHS function must be independent of other functions and report to the right level of command in an organization. Regardless if the functional manager reported to the CEO/MD or not, the focus should be on the independence of the function in the sense that it could highlight EHS risks and issues relating to those risks without other parts of the organization directly influencing, interfering or changing their assessments of risks and impacts.

7.4 Exploring the Impact of the Board Structure on EHS Leadership

The final question asked of the senior leadership during the interviews was board structure's impact on EHS leadership and governance. As discussed in the literature review, board structure, make up and the relationship between the CEO/MD and the chairman and other board members were all highlighted as factors of success of the board. Therefore a hypothetical

question was asked of these leaders on their opinion on which board structure they felt was best for EHS leadership and governance?

Figure 7.1 show the distribution of views of the question of what kind of board was hypothetically best in terms of leadership and governance of EHS in organisations.

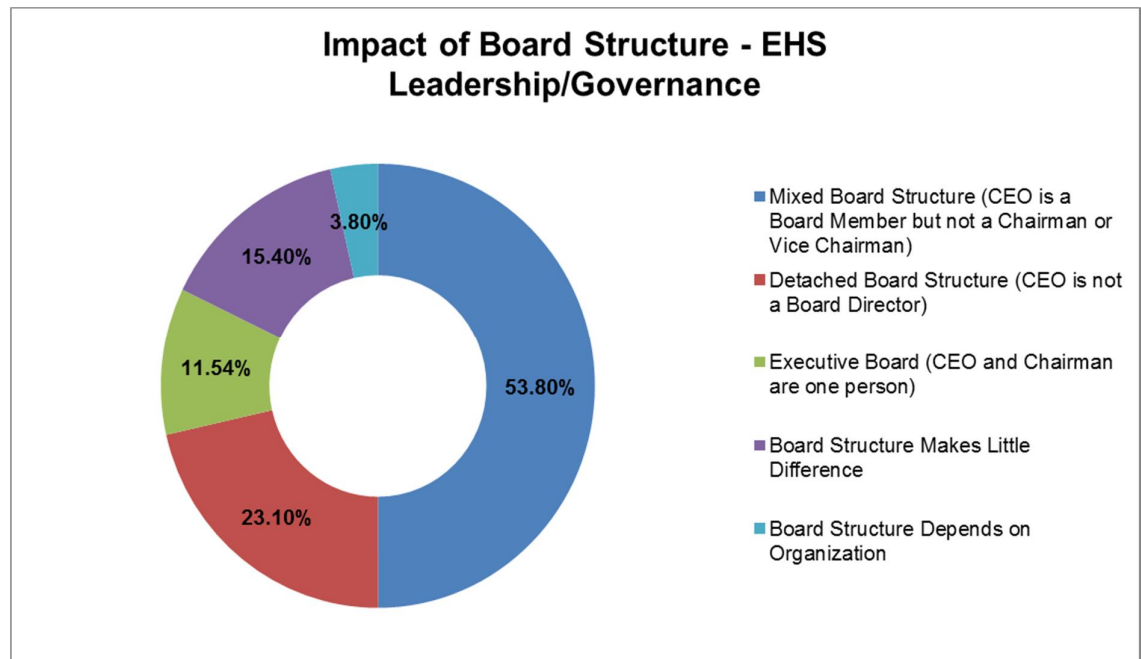


Figure 7.1: Impact of Board Structure of EHS Governance and Leadership

A total of five permutation answers were noted by the researcher. There have been various debates around board structure and its impact on board performance [Verdeyen and Van Buggenhout, 2003] and in this section we discuss the results with respect to this question in the context of EHS leadership. In response to this very question, it was interesting to note that the spectrum of opinions ranged greatly.

Bennington (2010) explains that the key areas that should be considered when studying board effectiveness include the role, structure and composition of boards, as well as the processes and relationships of Boards.

Of the total respondents, 53.8% indicated a preference to a ***Mixed Board Structure*** in which the CEO was a Board Member but not the Board Chairman or Vice-Chairman. There were various reasons cited for this which included that they believed such a structure brought about better alignment between Executive Management and the Board Members; It enables the CEO and perhaps some executives (who may also be appointed to the Board) who are knowledgeable about the business to better contribute to the major decisions made which can impact on EHS and Safety. They said that there is a better chance for the BoD members to understand the implications of the decisions they make, especially commercial and expenditure related which can impact on EHS and Safety; and that in general terms you end up getting better engagement from both Executive Team and the BoD.

This is probably consistent with the views expressed by Bennington (2010) and others such as Finkelstein and Mooney (2003) who explain that whilst collaboration is required between the Board and the CEO. The Board's primary responsibility is to provide oversight, advice and monitoring of performance and when needed to counsel/discipline the CEO. More recent research however has indicated a changing landscape and boards playing a greater role as strategic partners working in collaboration with the management team and in fact as indicated by Bjork (2006) now a changing more collaborative leadership between Boards and CEOs especially in the health industry.

There were also a relatively high proportion of respondents (23.1%) who supported the view of having a ***Detached Board*** in which the CEO and Executive Management only reported to the Board and were not members. They cited many reasons which included: that there must be a clear delineation of the roles and responsibilities between the Executive and the BoD and that the CEO is accountable for leading whereas the Board were accountable for directing EHS matters; that this maintains as they put it better *"Corporate Governance and Oversight"* especially for safety issues especially when there is a potential in an organization to have major incidents. They also said that ensured that the BoD makes more objective decisions as they

are not influenced too closely by more subjective decisions from the CEO and his team who may want to go ahead with a particular matter for a particular reason; and that this ensures that the BoD members remain as an independent directing and supervisory body.

This quote demonstrates this viewpoint: *“Yes, you must have that separation. I mean, governance is oversight, protection of the shareholders’ interests and the companies of long-range interests. Management is obviously focused on the next quarter, on the next year, they’re results driven. I think separation is good.”* [Respondent 22, Oil and Gas, Upstream, Page 22].

Only around 12% of the respondents supported having an **Executive Chairman Board** in which the CEO and Chairman were one. They cited their reasons for supporting such a Board structure by saying: If EHS starts at the top, then the Chairman as the CEO will ensure EHS issues are dealt with no compromise. The also said that no issues with misalignment between BoD and Executive Team as they will be one and the same; and that the BoD would become very effective advisors for ensuring the decisions that are made are balanced when it comes to EHS issues. Bennington (2010) explains that “duality” of roles of a CEO also as a chairman has become quite a controversial issue although it is common (and thus an acceptable practice) in countries like the USA, Hong Kong, North Africa and the Arab World. Furthermore he adds: *“Whilst agency theory views duality as inappropriate, as it reduces the monitoring role of the Board, stewardship theory views duality as removing any ambiguity about who is directing the organization and, thus, sees it positively”* [Bennington, 2010, Page 321]. To this end, Olayiwola, (2010) indicated that Executive Duality should not exist and that a clear separation should pertain of the head of management and head of the Board. This to the extent that even an executive vice-chairman position would not be acceptable in the context of the banking industry to ensure effective governance and oversight.

Some supported an either/or approach– i.e. both **Executive and Mixed** and **Detached and Mixed models**. However, interestingly 15.4% were of the

view that Board Structure made very little difference. This was for a few reasons cited such as: that safety and EHS is about responsibility and accountability so it is not the Board structure that will be the reason for better or worse safety leadership and culture within an organization; The performance of the Board in terms of EHS matters depends more on the optimum number of Board members who have varied experiences rather than structure; and that this depended more on the general diversity of the Board rather than the structure of the Board and that EHS was ultimately all about people. They also said that the board structure will continue to depend more on regulations and international best practice and Safety/EHS matters would be absorbed within those structures.

Board structures are very much influenced by size and type of the organization as clearly expressed by a CEO of a Manufacturing Company who is also a corporate governance specialist, he explains: *“Now when you speak about board structure you have to think about um it is a structure that has to be in compliance with the regulations and law for setting up the company”*. [Respondent 18, Manufacturing, Page 13]. And also another aspect from a shareholder point of view was that they set up the board according to the size and type of function that the organization is doing, the following quote illustrates this: *“So if you have a small organization which consists of 4 guys, you don’t have to go through the trouble of setting a whole full-fledged board”* [Respondent 18, Manufacturing, Page 13]. This is to some extent also consisted by the views of Millstein & MacAvoy (2003) and Bauer & Schmidt (2008) etc.

Finally, one respondent did express that Board Structure effectiveness depended more on the organization and the relationship dynamics between the CEO and the BoD [Respondent, 25, Aviation]. The Summary of all the findings on board structure is given in **Appendix J**.

7.5 Developing the Contextual Diagram of EHS Leadership in the context of Corporate Governance and EHS Leadership

In chapter 1, a simple diagram representing the context of this research was presented showing the areas of EHS/Safety, Leadership and Corporate Governance. With the themes emerging from both the academic and practitioner knowledge of the researcher and now after undertaking this in-depth mixed methods research, other themes and ideas have emerged. Thus the conceptual model is populated with the themes thus transforming it in to the **Contextual diagram of EHS Leadership & Governance**. The diagram is represented below in figure 7.2. An explanation follows.



Fig 7.2: Contextual Diagram of EHS Leadership & Governance

The model shows the three areas of the research. The challenge of this research has been to find the areas where these three spheres of knowledge and practice overlap. The model shows equal circles but this is misleadingly

simplistic as the reality is much more complex and thus in practice the circles may be different in their areas and degree of overlap. However, what we know well is that the areas of overlap between EHS and Leadership can be defined by the EHS/Safety leadership theories and models which have been explored mainly by EHS practitioners and perhaps industrial psychologists. The area of overlap between EHS and Governance is an area defined as compliance, whereas the area between governance and leadership can be defined as the performance standards which define how the board evaluates CEO/MD performance and initially sets expectations.

The themes fall within different areas within this conceptual diagram. The themes as already explained in the above sections particularly and in the earlier chapters generally are distinct yet very much interconnected. They influence each other and drive one another's importance and emphasis yet they can still be explored as exclusive themes as well. Because the subject is relatively complex with so many factors, and to better understand it holistically, an understanding of the themes and their positioning within the contextual diagram helps define the model that is presented further for the purpose and utility.

Because of this complexity of this study due to the many themes (or factors) to be understood as a whole except very conceptually, by understanding where the themes lie in the diagram, we better understand the subject as a whole.

The themes which are given in red are the themes that initially emerged from the literature review. We find that only one theme seems to sit comfortably within the very centre - notably the monitoring of EHS performance. Another three themes sit off the borders; safety culture and communications falls within the border between the centre and EHS leadership, distinct yet very much connected to EHS leadership and as discussed earlier in this chapter in fact culture can be said to be a product of that leadership.

Knowledge and Competence and **Influence and Accountability** also border the central overlap area with performance standards. Boards expect a certain level of influence on organizations workings and also expect that accountability is taken for the results whether positive or otherwise. The same goes for EHS knowledge and competence only here this is applicable as influence & accountability to both the executive and the board leadership.

The other themes explored also fall within the other areas such as compliance; risk management and the legal imperatives for safety. OE and EHS management systems also are within the area of compliance but due to the technical nature we see the overlap with EHS. This explains the significant variation that we saw earlier in the results with risk management and OE & EHS management systems between the respondents and also between the oil and gas and non-oil and gas industries. Whilst these fall within the compliance theme they are not within the zone of “performance standards setting” (i.e. the area between governance and leadership) so due to the current board’s nature and EHS knowledge and competence, they see these two themes being addressed by influence and accountability.

With respect to **EHS reporting structures and hierarchies**, we saw differences in responses with reporting lines of senior EHS managers/directors within organizations sometimes reporting directly when senior leaders saw: (1) that they needed to be hands-on with EHS issues; (2) saw that it was important to promote the role of EHS in a message manifested by the direct reporting line to the top person within the organization or (3) where they saw that simply the reporting of EHS had to be direct to ensure speed and quality of reporting of information relating to EHS as a critical organizational matter. This is consistent with McLean (2003) who stressed that practitioner’s must report to the organizational leaders so that they may help in directly implementing their commitments but also as this reporting line in itself demonstrated to everyone within the organization that this position is a senior one, carrying equal importance to all the other operational, technical and financial functions.

On the other hand some other senior leaders interviewed saw that the reporting lines made little difference as long as there was a structure, strong procedures and management systems with responsible senior technical directors reporting to them, where EHS matters were raised through the operational and technical management layer. Overall, this theme is a matter of corporate governance.

On reporting structures, some of the leaders interviewed felt that as long as there is an independent role for EHS within the organization, the reporting was a secondary consequence. This emergent theme the researcher felt was within the border of compliance and governance.

As discussed in the previous section, the other emergent themes (shown in black) are also linked to one another and to the themes that existed at the start of the research. However, they have been developed through the iterative process undertaken to bring together common aspects of the string of ideas that emerged from reviewing the interviews undertaken. There is no right or wrong theme and they could have been combined in other ways. The researcher here used experience and reflective knowledge over 15 years of experience in the field of both EHS and management to bring these different ideas together to create these newly emerged themes.

In saying this, they may not be themes but important matters to understand in this developing model. For example, much of the ideas that emerged from the interviews came from the reflections of senior leaders and notwithstanding the fact that much of the literature was developed by practitioners in various fields of knowledge such as legal, leadership, safety, EHS, governance and so on these themes or ideas are real. They are what senior leaders see and feel and have an impact on this whole notion of EHS leadership in the context of governance.

With performance standards, the impact of conflicting organizational goals, impact of the standards within industry and the ethics, morality and corporate social responsibility were also aspects driven by the relationship and

expectations set by the board and the CEO/MD. The interviews very much revealed, especially when leaders were asked to comment on their future outlook on governance and EHS leadership, both internal and external drivers set an agenda and thus set the performance expectations from the executive management. A great deal of impact, it was discussed, has been the industry standards rise in the past few decades. This is particularly true with the oil and gas industry but more pronounced in the aviation sector.

On corporate social responsibility at least three highly influential and senior leaders explained that the very viability and sustainability of their businesses in which the shareholders were governments was not possible within their organizations continuing to contribute to creating jobs for the nation's workforce, socio-economic development through sponsorships; developing local talent; awarding contracts to local businesses and generally supporting society at large. This, the researcher felt, needed to be translated into performance expectations by the Board of the CEO/MD. Whilst it is related to EHS, especially when it comes to labour rights and environmental stewardship it is sufficiently distanced in the model to sit where it does under performance standards.

Then, at the very heart of this contextual diagram sit many important ideas or themes that arose from the senior leaders' qualitative inputs. Some of these themes are organizationally tactical and others the researcher views as highly strategic. The more organizational themes are those which related to **transparency** as a culture where there is open reporting and generally open communication systems without the fear of reprimand which is also linked to leadership and the creation of a just and fair culture as discussed in the literature [Refer to HSL (2011)] high reliability organizations that have a **Just Culture** promoting transparency in reporting of incidents and improvements with a great balance between supporting the reporting culture and tolerating unacceptable behaviours.

Also at the heart of the diagram the **Ethics and Morality** of leadership plays a very important role in EHS leadership and governance. EHS is mainly

about the protection of people, environment and assets and loss prevention. This does not always amount to pure financial rewards. In fact, sometimes operating in a risky way even if there is a high potential loss may mean very high returns, and without basic ethics and morality it may otherwise be justified to operate in an unsafe way as long as you do not get caught.

Linked to EHS knowledge and competency at an organizational level is **learning organization**. This is also linked to safety culture and communications as well as transparency. Many interviews demonstrated that EHS and improvements that are being made in organizations was a long learning journey in which the whole organization including the board was on. In that journey continually learning was pivotal to improvement and the eventual running of operational excellent EHS management systems.

Analysis of Performance may be combined with the **Monitoring of EHS Performance** theme and in the final model we see this as an outcome of the many themes and factors that have been extensively discussed. The themes were kept separate for the purpose of illustration that various senior leaders interviewed explained that boards should analyse performance and not just monitor. Their main arguments were that if the information presented was analysed they would be actually playing a more engaged role; effectively understand what is going wrong but also what is going right and thus better appreciate the efforts being exerted by the whole organization to maintain a high level of performance.

On **Alignment of EHS goals with Business Goals** this theme relates strongly to a consequential theme being developed which also resides in the heart of the diagram, which is making EHS an **Organizational Value Driver**. It was recognized by some of the senior leaders that this misalignment between EHS and business goals created the lack of **Investment in EHS** and also as discussed earlier created the **Impact of Conflicting Organizational Goals**. So in their own right these aspects or themes have a strong bearing on the model and thus perhaps when looking at solutions to improve governance and EHS leadership in organizations, these aspects

must be studied carefully and pragmatic solutions need to be presented. By making EHS a core business/organization value driver, its importance is presented to everyone within the organization including the board. Only here the board must drive this through setting an expectation of the organization to make EHS a core value. This is what the HSE-IoD (2008) best practice guideline explained about the BoD setting the tone for the organization and in doing so they were demonstrating their EHS leadership.

Finally, there has been much discussed about high reliability organizations and their attributes and also sustainability in the literature review. During the interviews the overarching paradigm that was felt about EHS from the business leaders was based on having policies and systems in place to prevent incidents from occurring and being ready to deal with incidents when they do occur. Thus ***Business Resilience and Preparedness*** sits also in the heart of the diagram. In the context of high risk industries, to become high reliability organizations, business resilience and preparedness becomes a theme of central importance.

7.6 EHS Leadership & Governance Model

Figure 7.2 has helped in synthesising the data especially from the qualitative enquiry and thus brings together all the factors in the way of themes which have come from both the literature review and qualitative enquiry. The diagram is too fluid and fails to give us three fundamental requirements. The first is the relationship of the themes and factors with one another as they surely are linked and influence each other. Secondly from a very basic analysis the diagram is not able to arrange these factors into groups. Finally the conceptual diagram although places factors within the research areas explored it fails very much to link these factors in such a way to explain their ultimate impact on organisational EHS leadership and governance. So whilst, the researcher is confident that the diagram provokes further thought; creates an excellent foundation for debate; and most importantly in an abstract way positions these highly complex set of inter-related themes and concepts,

further to its creation a more meaningful and practical model has been developed.

Figure 7.3 builds on the model given in Figure 3.1 on page 76 and defines the themes that emerged in the literature review as well as the themes that emerged in this qualitative research.

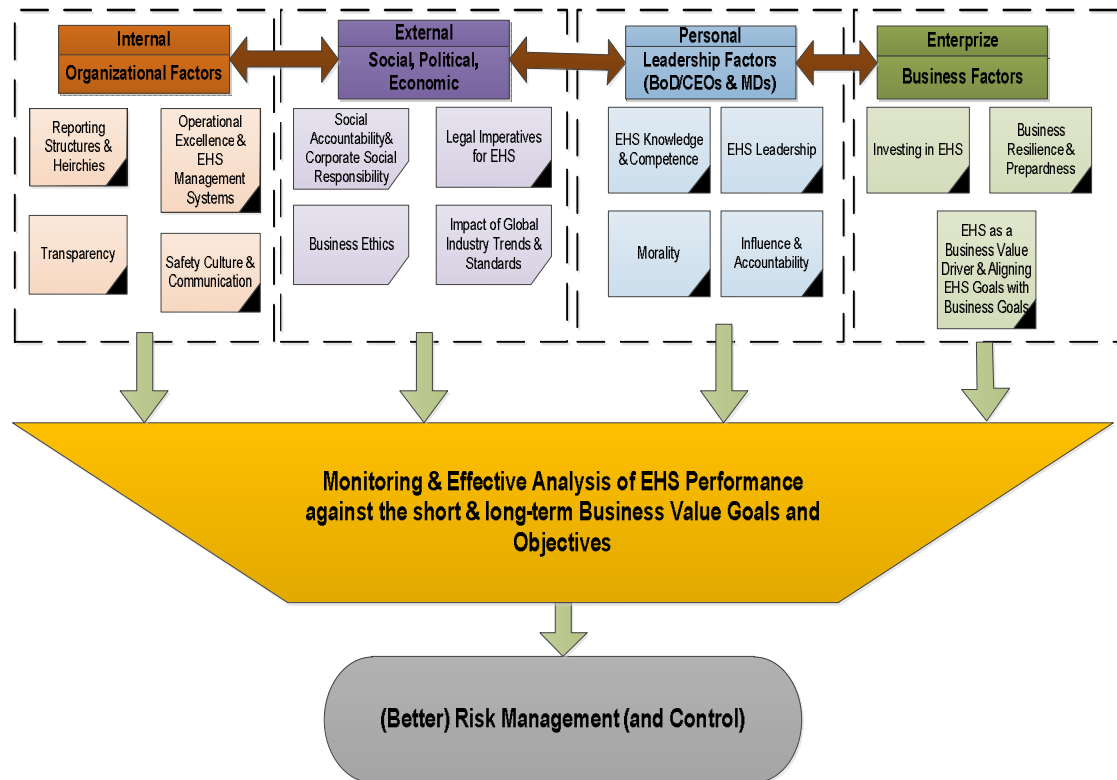


Figure 7.3: Model of EHS Leadership and Governance

The themes have been grouped in to four key areas including Internal Organisational Factors; External Social, Political and Economic Factors; Personnel Leadership Factors and finally Enterprise Business Factors.

As we have already explained the factors themselves already the researcher found that if the model presented in Chapter 3 is now revisited incorporation of the merging themes and a further appreciation of the factors is possible. To explain this we explain the key developments in what follows:

Internal Organisational Factors:

The research confirms that leaders when probed on the three areas that evolved from the literature review which included Operational Excellence and Management Systems; Reporting Structures and Hierarchies; and Safety Culture and Communication they responded confirming their importance and in fact a total of 33 sub-themes evolved. However, this factor or theme on transparency evolved from the inferences from the data. These four factors have been classified or grouped under the internal organisational factors.

External Social, Political and Economic Factors:

Perhaps what was not fully appreciated when external factors were initially studied further to the literature review and what in fact the literature review failed to highlight is that the factors that related to business ethics; social responsibility and accountability and most significantly the influence of global (trends) practices and standards have a significant impact within the external factors. The legal imperatives for safety that much of the literature emphasised was important, is indeed important but may not be the most important external factor on business. This can be considered an important and significant contribution of this research.

Personal Leadership Factors:

Whilst 3 of the 4 factors in this emerged model existed in the original model in chapter 3, this research highlighted the influence of these 3 factors and highlighted the sub-themes under each theme which are important to understand. However, further to that morality came out also from the interviews as a critical personnel factor from many of the interviews. Morality is an internal factor which influences leader's behaviour and whilst some (limited) literature mentioned the aspects of morality, there was not enough in the literature which truly highlighted its importance like through the interviews with these decision makers.

Enterprise Business Factors:

The biggest contribution that this research highlighted, and possibly as a consequence of the disciplines that currently research and write in this space of EHS leadership and governance which the literature review was based on, is the impact of the enterprise factors. These business factors which were illustrated in the interviews which were in 3 key areas. EHS is seen by the leaders of high reliability organisations as a business value driver, EHS is simply good business in their minds. Moreover EHS matters need to be effectively aligned with the business goals and objectives and this is an important influencing factor, especially when one appreciated that at the very basic level, EHS provides a long-term sustained business imperative. This also leads to the fact that business continuity through reliance and preparedness for incidents is an important enterprise aspect to consider. Lastly, and a very important and refreshing view-point that many leaders expressed was that EHS they saw as an investment and thus it was important to invest in safety for the long-term healthy growth of the enterprise. This is opposed to the more published view of EHS being purely a cost of compliance.

Monitoring EHS performance whilst being an established theme in the original model in chapter 3, what is significant is that further to the qualitative research undertaken it confirms this to be an outcome of the four thematic groups discussed above within the model established. Moreover, it is not simply the monitoring of EHS performance as much it is the monitoring and effective analysis of performance that was expected by the board that adds value to the mid and long term business value goals and objectives. Thus Board Directors must get more involved, and make a greater effort to understand reasons for EHS performance to guide and direct the executive managed effectively. Lastly the model describes that all these themes that relate to leadership, internal organisational, external business environmental and enterprise factors impact directly on risk management and can be thus predictors of effective risk controls that can in turn effectively ensure the long term sustainable growth of high-risk/high reliability organisations. What

the model also clearly demonstrates is that effective control can be achieved through effective monitoring, meaningful insights borne from a better holistic understanding of all the themes that relate on EHS leadership and governance leading to a more effective governance of EHS.

Chapter 8 – Conclusions

8.1 General Conclusions

The Gulf Corporation Council States (GCC) in the Middle East has seen significant and rapid growth in the past few decades. This has brought about energy intensive industrialization to a great scale mainly based on the by the oil and gas economy. Many of the large high risk organizations are state owned and play an essential socio-economic role in these States making their aspiration to being high reliability, safe and productive organizations a matter not only of economic interest but also of national interest.

The literature review in this research discussed many diverse issues within the context of the research into EHS leadership in high risk, high reliability organizations from the context of corporate governance. Nine key themes emerged from the literature review and they were tested through using a concurrent mixed methods research design. All the themes seem to be important to understand and consider, with a few themes being more critical than others. The themes themselves do not all seem to fall neatly into the areas of contextual overlap between leadership, EHS and governance in the contextual diagram, but they have been grouped effectively in the model that has emerged from this research (Chapter 7, Figure 7.3). Some do such as monitoring (and analysis) EHS performance, and others are strongly connected to that central area such as Safety (EHS) Culture and Communications which it was recognized was driven (or at least a product of) by EHS leadership. Other areas such as Influence and Accountability and EHS Knowledge and Competence also sit somewhere between the central trio-overlap area and the performance standards and expectations by boards.

The emerging themes which had a direct impact and which sit well within the central trio-overlap area include the impact of ***transparency; continual learning organizations*** and ***business resilience and preparedness***.

These are significantly important organizational matters that need to be addressed to help support a strong EHS leadership structure where performance standards, compliance and EHS leadership models organizationally augment together. From a strategic perspective the ***alignment of EHS goals with the business goals*** in general borne from ***EHS being an organizational business value driver*** for a high risk/high reliability organization is imperative.

From a board perspective also the ***analysis of performance*** when it comes to EHS within such risky organizations is critical to their appreciation of what creates this safe and reliable organization they are ultimately responsible for, especially over an extended period of time. This will hopefully make them appreciate why the timely ***investment into EHS*** is so important for sustained highly reliable and safe operations and thus profitability.

Ethics and morality of leadership were seen to be strongly connected to EHS leadership and whilst these can be argued to be intrinsic human related aspects it is to be appreciated that ethics and morality are issues that relate to leadership in general and also specifically to EHS leadership. They are performance standard and board expectation related issues and part of what a board monitors in the CEO/MD is their behaviour and how moralistic and ethical it is. It is to be noted that business ethics is positioned under external factors as this has become a code of practice within industry and like other best practices it was felt it is thus an external factor.

Other issues such as ***Operational Excellence and EHS Management Systems; Legal Imperatives for EHS*** and ***Risk Management*** as well as the emergent theme of the ***independent role of EHS*** within the organization all fall in the area of compliance.

Finally the ***Reporting Structures and Hierarchies*** seem to be related to governance and generally organizational structures and as far as the leaders feedback was concerned had mixed feedback, some making a big difference of who the senior EHS resource reported too and with others making a small

difference or being of little significance. This theme thus sits between governance and the central zone.

To this end, the most important question to be posed is what to call this zone in the middle which has significant bearing of all three areas of EHS, leadership and governance. To define the area, and given the complexity of the model in general, the researcher chose to develop a suitable descriptor for this zone by using the themes that are contained within and what needs to be created. Therefore a suitable definition or description of this zone is ***EHS Leadership Reliability - Through Alignment of Organizational Action, Business Value Drivers/Goals and Corporate Oversight.***

8.2 Summary of Conclusions on Research Questions, Aims and Objectives

This research explored the perspectives of the senior leaders in high risk and high reliability organizations operating in the GCC region on EHS leadership and governance matters. This was done initially building on a conceptual understanding using key emerging themes from the literature review. It then tested levels of agreement on questions relating to these themes. The semi-structured interviews also gave reasoning and richer understanding to the themes explored and also helped in effectively purging out other themes and perspectives which perhaps the literature did not mention in any significant way or did not consider as these evolved from the perspectives offered by organizational leaders directly.

With respect to the aims and objectives:

Chapters 2 and 3 addressed the current academic and organisational definitions and understanding of high reliability organisations, EHS leadership, corporate governance and risk management besides many other related topics including legal imperatives for EHS; EHS organisational culture developments; the relationship or impact of corporate social responsibility, social accountability on EHS and board dynamics in the context of high

risk/high reliability organizations. The review also allowed for an initial development of an early conceptual diagram which classified or grouped these themes together. It is worthy to note that actually the relationship between monitoring EHS performance and its impact on risk management was established at this early stage. The relationship of the other 7 themes was also established but as it would seem after the extensive interviews and survey data collection; another 8 themes emerged, 3 of which also allowed for the formation of another group called the Enterprise Business Drivers.

The literature available was used to develop a basic framework of 9 key themes that emerged from current work around safety leadership and governance. These themes included: (1) EHS Knowledge and Competence (of CEOs and Directors); (2) EHS/Safety Leadership; (3) Risk Management; (4) Influence and Accountability; (5) Developing a Safety Culture and Communication; (6) Reporting Structure and Hierarchies; (7) Legal Imperative for Safety; (8) Operational Excellence & EHS Management Systems; (9) Monitoring of EHS Performance. These have been defined in chapter 3 and discussed throughout the remaining chapters of this thesis.

The emerging themes included: (1) Transparency; (2) Business Ethics; (3) Impact of Global Trends and Standards; (4) Social Accountability and Corporate Social Responsibility; (5) Morality; (6) Investing in EHS; (7) Business Resilience and Preparedness; and (8) EHS as a Business Value Driver and Aligning EHS goals with Business Goals.

The author developed a mixed methods design as a methodology which was the best method believed to investigate the current themes and evaluate if there are any other themes that exist with respect to EHS Leadership in the context of Corporate Governance. The mixed methods research design was used concurrently because of various reasons which included: (1) Allowing for greater context given that this was exploratory research the development of the quantitative survey was really to test and compare between the responses from senior managers. But this needed greater context and therefore the quantitative enquiry is used to gain understanding of the

differences between the perceptions on themes; (2) Giving the research greater utility value as a piece of engaged scholarship work of action-based management research. The mixed methods approach gives greater insights and findings which can be converted directly into workable solutions and thus recommendations for industry to take things forward; (3) Instrument development: Both survey questions and the semi-structured protocol related to the same emerging themes from the research, the use of the methods concurrently also served the qualitative method as a secondary validation, which in turn allows - at a later stage - for the refinement of the survey tool for future employment; and (4) Allows the researcher to answer different research questions; (5) Enhancement: This research tries to best describe the area of contextual overlap between EHS, Governance and Leadership. It is through drawing conclusions from both sets of data that the researcher was able to enhance and better confirming findings with more confidence and also perhaps greater generalizability of the findings.

These were discussed at greater depth in Chapter 4 and also the reasoning and rationale for a convergent parallel research design (has been referred to as concurrent mixed method design) is also discussed.

Using the quantitative research methods the focus of senior leader's perception on EHS from the corporate governance and performance perspective was assessed using the results from 30 panel-validated surveys. A comparison between the themes was undertaken and descriptive statistics were used to understand better the position of senior leaders with respect to the themes. A simple comparison also between oil and gas and non-oil and gas industry was undertaken successfully. These identified significant differences in perceptions/opinions of senior leaders between the two classes of industries on matters relating to risk management and operational excellence and EHS management systems.

The use of qualitative methods (semi-structured interviews) to examine the rationale, reasoning and underpinning discourses of senior leadership with respect to EHS leadership and governance was a very significant

contribution to this research. The type and volume of rich data the 26 recorded/transcribed interviews not only explained the views of leaders with respect to the literature-borne themes examined; this stage allowed for the emergence of other important themes based on the feedback on leaders directly.

In the discussion chapter 7, the value and demonstrated utility of such an approach of using mixed methods research design and the combination qualitative and quantitative research methods in this exploratory research at the data analysis and discussion stages is shown. The discussion also demonstrates how these two methods of study provided for a better contextual understanding of senior leadership's views on EHS governance within a fast changing and dynamic risk business environment assessing the dynamics of compliance, performance and sustained organisational growth.

Whilst it is clear how this research contributes to the development of research in EHS leadership/governance studies in the GCC, with some further validation work and improvements to the quantitative survey instrument such findings along with further data collected will add value to other such industries in other regions in the world. Whilst the Middle East and the GCC region have their particular cultural differences, EHS and safety are universally important from a basic humanistic perspective. Some of the findings of this research may very well be generalizable even at this stage, yet in respecting the fundamentals of engaged scholarship, further validation would really be strongly recommended.

In exploring the potential of developing a new framework for EHS Leadership and governance which helps explain the key components, the researcher has been able to develop the **Contextual Diagram of EHS Leadership & Governance** (see Chapter 7, Fig 7.2). The **EHS Leadership & Governance Model** (Chapter 7, Fig 7.3) may need further work and review but it forms a solid basis to build on. As is discussed later in this chapter, any further research, validation and review of the outputs of this research and the EHS

Leadership and Governance Model, will need the involvement of EHS specialists and senior leaders from high risk and high risk organizations alike.

8.3 Academic Implications of this Management Research – Contribution to the Development of Theory

Whilst much of the research done in this thesis is based on developing an in-depth understanding of the relationship of EHS leadership in the context of corporate governance, there are several academic contributions that this research has made. They can be summarised as follows:

8.3.1 Safety/EHS Directorship: From the literature review, very few references and academic research have addressed the issue of EHS leadership in the context of governance directly. Much of the research has looked at EHS leadership at an operational level and the impact mainly of business and site/company leadership, the impact of developing safety cultures within organizations and general research relating to studies of employee and supervisor/manager relationships. Much of this research has been by safety and behavioural scientists and some technical/engineering academic contributions. This research has approached the subject more holistically and did not look at safety and EHS leadership from the management perspective as much as it did more from a leader's perspective.

It is evident from the research data gathered from this study that not enough academic research has previously been undertaken into the impact of directorship action on an organizational executive leadership from an EHS perspective. In fact with the emerging themes and the Model (Fig 7.3) which evolved, it may be argued that the literature fails to focus on some very significant themes, due mainly to the lack of involvement of leaders in organisations and thus their perspectives and views are somewhat missing.

8.3.2 Limited Perspectives - EHS & Governance: From the literature, the researcher struggled to find any meaningful academic references about corporate governance and safety/EHS. There are many references to

Corporate Governance and its legal related, financial performance related and from an organizational control perspective. There is not enough literature that currently exists that connects between EHS/safety and governance and therefore this work makes a significant contribution to that effect.

8.3.3 Methodology: The research design selected (i.e. concurrent mixed methods research design) is not widely used (as explained earlier in Chapter 4 less than 10% of mixed methods research). This study contributes to demonstrating the utility value of this research method highlighting how it can be useful in contributing to the advancement of knowledge. It also demonstrated that a positivist approach can be effectively employed to extract rich information from qualitative data sets especially when a large dataset exists to work with.

8.3.4 Tool Development: The research design has allowed for the development of an effective survey for the purpose of this research. This instrument clearly needs further refinement and improvement in the future by (a) validating the questions further with a larger respondent population; (b) adding further questions that are linked and related to the themes that emerged from the feedback from the senior leadership interviewed; and (c) adding dynamic industry emphasis related questions and exploring where certain more specific questions that measure similar values can be used to reduce the effect of the potentially industry-bias questions.

8.3.5 Further Academic Studies: There is much that can be gained from the academic enquiry into this subject which connects the various subjects of leadership, EHS and governance. It is hoped that this research into EHS leadership and how it has connected with the aspects of governance, board action and oversight will motivate others working in different fields to take this research further and also seek to develop new research into these connected fields of research.

8.4 Organizational Implications of this Management Research – Contribution to the Development of Management Practice

Industrial accidents and incidents can cause serious losses including loss of life, serious injuries, asset destruction, environmental damages and significant economic loss. Researchers and practitioners alike have been working for years to try to find better ways to address major incidents and generally to control major accidents and incidents.

The researcher believes that this exploration into EHS leadership in the context of the board action and governance and oversight contributes to a field of management research which needs to be developed further. Many references and many researchers and practitioners have agreed for so many years that EHS must start at the top of the organization and must be driven by leadership action and commitment. In fact some recent research talks about stewardship rather than even leadership which connect the facets of the different types of leadership in organizations.

The way forward for effective research and practice is to seek to understand and educate directors on the issues of EHS in high risk organizations. With the various themes that were explored and that have emerged in this research, one factor does connect them all; they are not only about systems and practices but they are also about leadership action. Be it a matter related to risk management; operational excellence and EHS management systems; alignment of the business goals with EHS and making EHS a business value driver or otherwise – all of these themes and all the others will help transform organizations to become high reliability organizations.

Leadership in the Middle East and the Arab World has been greatly influenced by the culture and religion within in the region. The collectivist culture of tribal leadership and on which the power lies at the top of hierarchies very much supports the changes that can come about through top leadership direction setting and action. The work of the board of directors and the chairman's direction-setting strategies, performance measures,

setting and expectations of the CEO/MD therefore become of even greater importance and consequence.

This work has been presented as it has developed over the past 3-4 years at various practitioner forums [Al Hashmi (2012); Al Hashmi (2013)¹; Al Hashmi (2013)²; Al Hashmi (2013)³; Al Hashmi (2013)⁴; Al Hashmi (2014); Al Hashmi (2014)²]. The general interest and feedback from the delegates and fellow practitioners has been extremely positive. This has served to further motivate the research during the past 36 months.

The senior leaders in the roles of CEO/MD need as much support as do the EHS practitioners and managers within an organisation from their leadership. This research shows that whilst the board plays a small role in developing procedures and policies directly, they have a significant role in three key ways:

- (1) **Direct EHS Effectively:** As part of setting the tone establish clearly the importance of EHS in high risk/high reliability organizations through the setting of performance standards and expectations of the executive management to have effective control in EHS matters. As such they must be clearly balanced with their direction to maintain sustained economic value returns to their shareholders whilst ensuring their stakeholder obligations are also sustained. This is particularly important as most of the corporations being addressed in this research play a significant role in socio-economic terms within the region. The balance between motivating the executive leadership to achieve higher economic returns and maintaining safe and reliable operations is of paramount importance.
- (2) **Know EHS and Engage:** As part of gaining a greater understanding the executive management need to learn more and raise their awareness as a governance body of the EHS issues within an organization in order to understand better performance from monitoring reports; appreciate the efforts being executed by the

organization to make it more safe, reliable and sustainable; understand fully the need for investment into EHS when these needs arise. They need to be able to see clearly if risks are being controlled effectively in a dynamic environment with constantly changing external and internal factors.

- (3) **Support and Advise:** As part of the leading role the BoD plays, it has to play a supportive role if it is to be fully effective. The directors have to be able to add value in either reviewing or when deciding on supporting executive management proposals. EHS is complex and sometimes whilst supporting a particular initiative that may make a great deal of sense commercially, operationally or otherwise, it may have significant EHS implications that need to be assessed. The board must be able to create an environment of knowledge sharing and transparency and play more a supportive and advisory role rather than a pure governance role. Whilst governance is a critical role they need to play, they can combine that role with engaging in constructive and informed dialogue with the executive management in which EHS is always a factor to be assessed when certain items are being discussed or decisions need to be made.

The contribution that this work makes to management research and scholarship is made significant by the fact that there is little structured research on the subject of EHS leadership and governance in general. Moreover and specifically in the GCC where no in-depth studies have been found that relate directly to EHS leadership and EHS culture this has been very specific to particular organizations and many of these studies, or at least the details of these studies remains company confidential. Some practitioners and perhaps consultants have shared some work from work done within or for organizations but it lacks depth and the kind of scholarship or academic value that this study on the other hand provides.

8.5 Limitations of this Work

The study scope of this engaged scholarship research has been a significant undertaking. Like any such research there are various challenges and limitations. Some of these limitations are related to the location of the research, some of them are related to the subject itself and its concomitant sensitivities and some are also related to the researcher himself.

8.5.1 Limitation of Quantitative Survey Sample: A total sample of 30 persons completed the surveys that were used in this research. This meant that the statistical analysis was not possible due to significant lower reliability. This was clearly discussed in Chapter 5. Given that this was a concurrent mixed methods research design and that the interviews were conducted immediately after administering the instrument, it would have been difficult to manage more than 30 interviews which in itself generated a sizable amount of data for the descriptive qualitative analysis.

8.5.2 Duration of the Data Collection Stage: Given the fact that actual data collection could not start before Ethics Approval was received it was difficult to start communicating with potential respondents. Given the nature of these respondents as very senior persons, it was thus difficult to get appointments quickly and easily. This created a basic limitation and impacted the amount of time available to access various respondents. This limitation the researcher tried to overcome by collecting data from a large sample size for the qualitative analysis which it is felt added to the general richness of the analysis.

8.5.3 Literature Review Sources: As discussed in this thesis, the literature about this subject of EHS leadership in the context of corporate governance is limited. Therefore the literature review was detailed on aspects which related to the subject in very large areas – the focus had to be on governance and EHS leadership and culture as opposed to researching for example all the different leadership models. Whilst this is seen as a potential limitation, the impact was mitigated by the fact that organizational EHS

culture and safety/EHS leadership was discussed at some length. The extracted themes came from some anchor references to bring about focus to the study which can also perhaps be seen somewhat as a limitation of the study.

8.5.4 Scholar is an EHS Practitioner: As the researcher is an EHS practitioner, this may have influenced the analysis of the data as perhaps some degree of technical knowledge sometimes creates bias. The researcher sought to overcome this by exploring industries beyond oil and gas to be challenged by different perspectives; through the use of the quantitative tool, the statistics were used to try to more objectively review a topic which can be subjective and dependent on various factors; and the stages of initial literature research, instrument and interview protocol development, data collection and data analysis were done as discrete steps/stages to seek to maintain objectivity and focus without having one process of research influence the other.

8.5.5 Scholar works as a Director of EHS Compliance in a Peer Organization: This limitation was difficult to overcome as this was related to the scholar's profession. The only other choice was to understand this study only within the researcher's employing organization, and this would have brought about even greater limitation at least with respect to the conclusions which would have been more of a single case study rather than a wider based piece of engaged scholarship. As discussed in the methodology, the use of the introduction letter; sharing the researcher's profiles; giving out University business cards and co-signing the confidentiality statement from all the respondents helped to position the researcher more as a scholar rather than an employee of a peer organization.

8.6 Scope for Further Future Engaged Scholarship in the study of EHS Leadership and Corporate Governance in Organizations

There is some scope for further development of this work. Such research opportunities are explored below. A further recommendation is that more practitioners should be encouraged and motivated to get involved in doctoral level research as it brings about enhanced knowledge, better understanding and greater depth of impact. The kind of work that can take place includes but is not limited to the following:

- (1) Development of the Survey Instrument: The Survey instrument can be further developed to include new questions based on the emerging themes. The current questions can also be further refined and further validated through more piloting and expert panel research. The survey as explained earlier could be refined to have general questions as well as other questions for particular leaders for certain industries. A larger population could then be targeted to run more detailed inferential statistical analysis.
- (2) Testing the Survey Instrument against other industries within other regions of the world. This would be interesting to see if similar results appear and thus one could start to draw more generalizable results. This would thus benchmark the model or allow for benchmarking of the model more globally.
- (3) Further validation of the model developed through focus groups with senior and experienced leadership to see their level of agreement with the logic on the placement of themes within the zones identified.
- (4) Development of a standard semi-structured interview to assess the level of maturity of the EHS leadership from a corporate governance perspective within organizations. As discussed earlier the questions can be further refined to address specificities of each industry type.
- (5) To present this research and further developments after the doctorate at forums such as Board Director Institute meetings and to company Boards around the GCC to raise awareness about the importance of EHS leadership.

Otherwise from a methodological perspective, the use of sequential mixed methods can be undertaken to see if a qualitative enquiry can help develop a structured survey instrument with a greater range of questions. From this viewpoint, the survey instrument could be developed independently to gauge the level of EHS leadership within organizations from the perspective of corporate governance.

8.7 Final Personal Reflections of the Researcher

The reflections presented in chapter 4 explained the learning for taking perhaps a positivist position with respect to methodology. However, at this point I feel strongly that the subject of EHS leadership in the context of corporate governance is highly complex even though I am satisfied that the emerging model contributes considerably to our understanding of the many factors that are at play. The model would still need further refinement in the future to understand the magnitudes of influence that each factor or theme has on the other and within the model more widely.

I feel as a practitioner that this can only be validated through further in-depth research perhaps through a series of focus groups with EHS practitioners, corporate governance specialists but most importantly with business leaders. When senior leaders who occupy positions of CEOs and MDs are able to make sense of this model and recognize the factors, then the model can become more functional.

Throughout my experience of working at the grassroots levels as a safety officer on a construction site, working as an environmental consultant conducting environmental and health and safety studies and as a EHS supervisor at a refinery I had grown frustrated with the perceived lack of EHS leadership as how I defined it in my mind at the time. Even now, as Director of EHS compliance in the largest Oil and Gas Company in Dubai, United Arab Emirates, the overall picture is not totally clear. I feel at least now I understand why, the whole matter of EHS leadership is not only complex, it is also dynamic and the factors and themes that are involved, are both

interrelated and evolving. Thus it is impossible to seek to understand any particular leadership action without understanding the organizational, governance and EHS imperatives at play at that time.

I therefore cannot profess that I now know and fully appreciate the answers, even after this long journey of engaged research. I think that this is because to understand high reliability, you have to understand the factors which are at times universally logical yet may be in the context of space and time within that organization different. Then one must appreciate that EHS leadership does start at the top of an organization and must be driven in such a way that it creates effective EHS cultures, which balance between operability, organizational growth and development and economic prosperity. I now also better appreciate that perhaps the factors will change and as high risk organizations adopt more balanced approaches to enterprise risk management, operationally excellent systems and create through leadership actions EHS cultures which promote transparency and shared learning they will become highly reliable and thus sustainable.

In my mind however, I have been deeply challenged as both an engineer and practitioner to step out of my paradigm of strong beliefs in systems, processes and procedures as the true assurance of creating high reliability organizations – especially as I function as a chief compliance officer for my organisation. I feel personally now, it is more to do with the dynamic relationship between the Board and the Executive Management team and the performance standards set by the Board of the CEO/MD. This dynamic relationship of the CEO/MD educating the Board on the enterprise specific risk management approach most suited to that business and likewise the Board playing a more supportive role and even when challenging the CEO/MD, the board must be both objective and progressive in their thinking.

I have grown much more empathic as a practitioner as a consequence of this research to the position of the top person within an organization. They carry a very large burden especially in high risk organizations. They are expected to be stewards of EHS yet manage all the other organizational challenges and

expectations from the Board. To remain focused, balanced and even-handed in their leadership is not easy with clearly at time conflicting organizational priorities mainly borne from the motivation of the creation of higher economic value.

I also feel going back to the concepts around corporate governance development (see Chapter 2) that the greatest challenge is to maintain reliability for the purpose of the generation of long-term sustained value. EHS is just a significant risk factor in that equation in high risk organizations. In some of my casual discussions with close colleagues of mine who work as EHS specialists within the industry, they have explained to me that their view on safety/EHS performance and where they see boards getting seriously involved is when the risk of loss is just too high to ignore. They explain this by citing the significant improvements in the aviation industry in the past 3 decades.

I am very proud of this work. I believe it will have a great impact in time to come to help demystify the complexities of EHS leadership in the context of governance. However, I also know that the work only begins when you are able to provide pragmatic solutions to improve EHS leadership actions. I have thus merely and only helped explain the question and that hopefully answers some of the question.

Finally I feel a great deal of privilege, to have been given an opportunity as a practitioner to conduct such research at a professional doctoral level. I have over the past 4 years been presenting on milestones of my work and have received a great deal of fascinating feedback from fellow practitioners. Even some of the leaders I have interviewed were so supportive and positive about this research. They encouraged me tremendously and some have asked me to return to them so as to present the findings of this work to their boards and executive management teams.

To this end, I feel whilst this thesis might be completed at this juncture, to take this knowledge forward and further develop this work is no longer a matter of choice, not even a calling but a fundamental responsibility.

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APPENDICIES

Appendix A: Survey Question Statements and Corresponding Literature Review Themes

No	Question (Final Form)	Lit Rev Reference Themes
1.	The Board of Directors (BoD) needs to accept both formally and publicly their collective role in providing health and safety leadership in their organization.	<ul style="list-style-type: none"> • Safety Leadership
2.	The consultative process and communication of the Health and Safety Policy to all stakeholders is a key role of the BoD and not only the Chief Executive Officer (CEO) or Managing Director (MD).	<ul style="list-style-type: none"> • Developing a Safety Culture and Communication
3.	Health & Safety is the full line manager's responsibility and accountability and not in any way the BoD.	<ul style="list-style-type: none"> • Safety Leadership
4.	The role of the BoD in Health & Safety leadership should be minimal; responsibility should only be with those who have an expertise in Health & Safety.	<ul style="list-style-type: none"> • Safety Leadership
5.	Each Board Member needs to accept their individual role in providing health and safety leadership for their organization	<ul style="list-style-type: none"> • Safety Leadership
6.	Each Board Member needs to appreciate that their actions/decisions (where applicable) should reinforce the health and safety policies and statements with no contradiction.	<ul style="list-style-type: none"> • Influence and Accountability
7.	The CEO/MD should reinforce directives given by the BoD even when they may not be aligned with the Health & Safety Policy.	<ul style="list-style-type: none"> • Influence and Accountability
8.	The BoD needs to ensure that board decisions are aligned where applicable to the health and safety policy statement.	<ul style="list-style-type: none"> • Developing a Safety Culture and Communication
9.	The CEO/MD must ensure that the Environment, Health and Safety (EHS) Policy and Management Systems of Business Partners are at a similar level of effectiveness as his/her own organization.	<ul style="list-style-type: none"> • Developing a Safety Culture and Communication; Risk Management
10.	The role of the BoD is to ensure that the CEO/MD demonstrates there are processes to maintain business relationships with other companies, organizations and service providers to ensure they have at least equally as effective EHS policies and	<ul style="list-style-type: none"> • Risk Management

No	Question (Final Form)	Lit Rev Reference Themes
	management systems.	
11.	Safety Culture is a sub-set of the Health and Safety Department's work and not the Organizational Working Culture.	<ul style="list-style-type: none"> Developing a Safety Culture and Communication
12.	I would support the appointment of one of the BoD members as a "safety champion" as the "Health and Safety Director". The champion may be the CEO/MD or even the chairman of the Board, but he or she should be assigned formally.	<ul style="list-style-type: none"> Developing a Safety Culture and Communication; Influence and Accountability
13.	The CEO/MD must ensure that the internal controls are set-up to ensure legal compliance to regulations, prevention of any EHS incidents and Company EHS performance remains effective.	<ul style="list-style-type: none"> Monitoring EHS Performance
14.	The Senior EHS Manager/Director should report directly to the CEO/MD.	<ul style="list-style-type: none"> Influence and Accountability; Reporting Structure and Hierarchies
15.	The EHS issues should be discussed in the Audit and Risk Committee of the Board.	<ul style="list-style-type: none"> Risk Management; Monitoring EHS Performance
16.	A separate EHS Risk Committee should be set up that focuses only on EHS Risks and Issues at the Executive Committee Level.	<ul style="list-style-type: none"> Risk Management; Influence and Accountability
17.	EHS Risk Committees should involve executive managers from the company but no Board Directors.	<ul style="list-style-type: none"> Influence and Accountability
18.	As EHS issues have very little to do with future growth, EHS risk management should focus only on present risks and those arising from existing assets/operations.	<ul style="list-style-type: none"> Risk Management; Legal Imperative for Safety
19.	Executive management is principally accountable for setting an agenda to improve and maintain high standards of EHS and safety.	<ul style="list-style-type: none"> Safety Leadership; Operational Excellence & Influence and Accountability
20.	Executive management must not combine between the activities of the EHS risk management and the Enterprise Risk Management (ERM) committees.	<ul style="list-style-type: none"> Risk Management; Operational Excellence and EHS Management Systems

No	Question (Final Form)	Lit Rev Reference Themes
21.	Enterprise Risk Management (ERM) should be managed at the Board Level and not the Executive Management Level in an Organization.	<ul style="list-style-type: none"> • Influence and Accountability; • Risk Management
22.	<p>Board Directors must receive some formal basic awareness training in EHS and Safety.</p> <p>Training would typically include the obligations and responsibilities of company executive officers, employee rights to safe working environments, legal obligations etc.</p>	<ul style="list-style-type: none"> • EHS Knowledge and Competence
23.	Board Directors must at least once a year review the EHS statistics, incident analysis, improvement programs and other critical information relating to safety culture development and related investments.	<ul style="list-style-type: none"> • Monitoring EHS Performance
24.	The BoD should expect that the CEO/MD has a dedicated quarterly meeting with all the senior managers and EHS specialists to review safety and EHS performance of an organization.	<ul style="list-style-type: none"> • Influence & Accountability; • Monitoring EHS Performance
25.	The Company EHS Policy should be reviewed and endorsed by the Board of Directors before they are signed by the CEO/MD.	<ul style="list-style-type: none"> • Influence & Accountability
26.	The Board of Directors must push the CEO/MD and their team to apply a zero target for all EHS and Safety Key Performance targets regardless of historical data and performance.	<ul style="list-style-type: none"> • Developing a Safety Culture and Communication; • Safety Leadership; • Influence & Accountability
27.	The Board agenda must include EHS performance issues to be discussed, even if briefly at every Board Meeting	<ul style="list-style-type: none"> • Safety Leadership; • Operational Excellence; Monitoring EHS Performance

Appendix B: Survey Questionnaire – As Administered

Name:.....

Organization:.....

E-mail Address:.....

Years of Experience - (in High Risk/High Reliability Organizations) =.....

Are you a, please enter (Please tick one);

- (1) *Senior Executive – General Manager*
- (2) *Managing Director/CEO*
- (3) *Board Director*
- (4) *Both a CEO/MD and Member of the Board of Directors (If you are retired please respond with your last position)*

Sr. No	Question (Final Form)	
1.	The Board of Directors (BoD) needs to accept both formally and publicly their collective role in providing health and safety leadership in their organization.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
2.	The consultative process and communication of the Health and Safety Policy to all stakeholders is a key role of the BoD and not only the Chief Executive Officer (CEO) or Managing Director (MD).	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
3.	Health & Safety is the full line manager's responsibility and accountability and not in any way the BoD.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree

Sr. No	Question (Final Form)	
4..	The role of the BoD in Health & Safety leadership should be minimal; responsibility should only be with those who have an expertise in Health & Safety.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
5..	Each Board Member needs to accept their individual role in providing health and safety leadership for their organization	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
6..	Each Board Member needs to appreciate that their actions/decisions (where applicable) should reinforce the health and safety policies and statements with no contradiction.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
7.	The CEO/MD should reinforce directives given by the BoD even when they may not be aligned with the Health & Safety Policy.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree

Sr. No	Question (Final Form)	
8.	The BoD needs to ensure that board decisions are aligned where applicable to the health and safety policy statement.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
9.	The CEO/MD must ensure that the Environment, Health and Safety (EHS) Policy and Management Systems of Business Partners are at a similar level of effectiveness as his/her own organization.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
10.	The role of the BoD is to ensure that the CEO/MD demonstrates there are processes to maintain business relationships with other companies, organizations and service providers to ensure they have at least equally as effective EHS policies and management systems.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
11.	Safety Culture is a sub-set of the Health and Safety Department's work and not the Organizational Working Culture.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree

Sr. No	Question (Final Form)	
12.	I would support the appointment of one of the BoD members as a "safety champion" as the "Health and Safety Director". The champion may be the CEO/MD or even the chairman of the Board, but he or she should be assigned formally.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
13.	The CEO/MD must ensure that the internal controls are set-up to ensure legal compliance to regulations, prevention of any EHS incidents and Company EHS performance remains effective.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
14.	The Senior EHS Manager/Director should report directly to the CEO/MD.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
15.	The EHS issues should be discussed in the Audit and Risk Committee of the Board.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
16.	A separate EHSEHS Risk Committee should be set up that focuses only on EHS Risks and Issues at the Executive Committee Level.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree

Sr. No	Question (Final Form)	
17.	EHS Risk Committees should involve executive managers from the company but no Board Directors.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
18.	As EHS issues have very little to do with future growth, EHS risk management should focus only on present risks and those arising from existing assets/operations.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
19.	Executive management is principally accountable for setting an agenda to improve and maintain high standards of EHS and safety.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
20.	Executive management must not combine between the activities of the EHS risk management and the Enterprise Risk Management (ERM) committees.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
21.	Enterprise Risk Management (ERM) should be managed at the Board Level and not the Executive Management Level in an Organization.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree

Sr. No	Question (Final Form)	
22.	Board Directors must receive some formal basic awareness training in EHS and Safety. Training would typically include the obligations and responsibilities of company executive officers, employee rights to safe working environments, legal obligations etc.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
23.	Board Directors must at least once a year review the EHS statistics, incident analysis, improvement programs and other critical information relating to safety culture development and related investments.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
24.	The BoD should expect that the CEO/MD has a dedicated quarterly meeting with all the senior managers and EHS specialists to review safety and EHS performance of an organization.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree
25.	The Company EHS Policy should be reviewed and endorsed by the Board of Directors before they are signed by the CEO/MD.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagr
26.	The Board of Directors must push the CEO/MD and their team to apply a zero target for all EHS and Safety Key Performance targets regardless of historical data and performance.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree

Sr. No	Question (Final Form)	
27.	The Board agenda must include EHS performance issues to be discussed, even if briefly at every Board Meeting	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Agree to Some Extent <input type="checkbox"/> Partly Disagree <input type="checkbox"/> Disagree; <input type="checkbox"/> Strongly Disagree

Thank you for taking the time to respond to this survey. We will now conduct the interview.

This can also be posted directly to me at the following address or scanned and sent back electronically to the following two e-mail addresses:

Electronic Addresses:

W.S.M.Banihashem@bradford.ac.uk

wsg@enoc.com

Postal Address:

Eng. Waddah Ghanem

ENOC House 1, Second Floor – Group EHSQ Compliance Directorate

Oud Maitha; P O Box 6442, Dubai, UAE.

Telephone: 0097150-4503538

Regards,

Eng. Waddah S. Ghanem Al Hashemi

DBA Scholar – Bradford School of Management

University of Bradford, United Kingdom.

Appendix C: Typical Information Sheet



INFORMATION SHEET

Name of Researcher: Waddah S. Ghanim Al Hashmi

Title of Project: **Safety Leadership in High-Risk/High-Reliability Organizations in the context of Operational Corporate Governance with particular reference to the UAE and GCC.**

Dear Sir/Madam (this would depend on the interviewee):

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take your time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. The purpose of the research, which is part of my doctoral thesis, is to explore Safety Leadership in High-Risk/High-Reliability Organizations. The research explores corporate governance from an operational perspective and is focused on organizations in the UAE and the GCC.

You have been chosen because you are the CEO/MD/Board Director/Expert in Safety Leadership and/or Corporate Governance. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without further consequences. Additionally, you have the right to refuse to answer any questions with which you do not feel comfortable at any time during the interview process. If you agree to take part in the research, the researcher will carry out an interview with you that will explore your views on the role and context of safety leadership of CEOs, MDs and Board Directors. Your participation in the interview is likely to last for one hour and this interview will be recorded. The main aims of the research that will be guiding this interview are:

1. Explore the most critical attributes of safety leadership at CEO and Board Director Level?
2. Investigate how do/will the current and future changes in international and regional Corporate Governance practice impact on safety performance and leadership?
3. Explore how and to what extent do the legal imperatives, regulations and company policies impact on safety performance and leadership and how does it shape behaviour?
4. Explore how the company organizational structure may have a bearing on safety performance?

All the information that is collected from you during this research will be kept secure and any identifying material, such as names and addresses will be removed in order to ensure your anonymity. It is anticipated that the research will be written up into a report which may be published at a later date. However, your anonymity will be ensured, including the anonymity of your quotes, and all the information I have collected about you will continue to be kept secure for duration of no less than 5 years.

Please note that if you decide to withdraw your data from the study after participation you can do this within two weeks as after this period the researcher will have already written up the report. If you require any further information about the research please contact me by email: Professor Jackie Ford - J.M.Ford@leeds.ac.uk. Thank you for reading this information sheet and taking part in this research. **By consenting to take part in this research you acknowledge that information discussed to be used in this study with the understanding and that the information provided will be anonymised. THANK YOU.**

Appendix D: Researcher's Biography



Waddah Shihab Ghanem Al Hashmi

BEng (Hons), DipEM, DipSM, MSc (Dist), MBA, FEI, AFIChemE

Chief EHSQ Compliance Officer
Group Environment, Health & Safety, Quality Compliance Director
Emirates National Oil Company, Dubai, United Arab Emirates

Vice-Chairman of the Board of Directors,
Dubai Centre of Carbon Excellence PJSC, Dubai, UAE.

Waddah's background is an Environmental Engineer, graduated from University of Wales, College Cardiff. Has worked as a consultant at the start of his career and then moved in to the Oil Industry to the first Oil Refinery in Dubai, UAE, ENOC Processing Company LLC during the Construction and Pre-commissioning phases. After commissioning Waddah became the EHS Supervisor/Coordinator and was in charge of all Environmental, Health and Safety as well as Fire Protection issues aspects of the Refinery Operations, Maintenance and Engineering. Whilst working he studied intensively and obtained two Diplomas in Environmental Management and Safety Management from the UK respectively. He holds a distinction level MSc in Environmental Science the University of the UAE.

Waddah has varied base of experience and working knowledge of environmental management systems and pollution control; fire and safety compliance and design reviews; occupational health management systems development and administration; EHS Management Systems Auditing; Job Safety Task Analysis; TQM; Energy and Resource Management and other HSE specificities. He has presented to date more than 90 presentations and technical papers at various local, regional and international conferences and forums. Waddah has co-authored two books "Safety Management – A comprehensive Approach to developing a Sustainable System" (published January 2012) and "Reflective Learning for HSE Practitioners" (in Press).

Waddah heads as the Chief EHSQ Compliance Officer for the ENOC Group. Ghanem chairs and is a member of various EHSQ based Committees. Waddah has been an executive committee member of the Emirates Safety Group, an advisor on the Higher Colleges of Technology (HCT) Environmental Sciences Program Committee and served also as a member of the Petroleum and Lube specification Committee for the Government of the UAE. Waddah has an Executive MBA from the Bradford School of Management, University of Bradford in the UK in which he specialized in organizational safety behavior. His current Doctorate research is in Operational Corporate Governance and Safety Leadership in High Risk/High Reliability Organizations in the GCC.

Waddah has built up a fully functional 5-Department integrated EHS Compliance Directorate for the Emirates National Oil Company in the past 10 years. He is also the current Chairman of the ENOC Wellness and Social Activities Program Committee for the whole organisation which has more than 6000 employees, a post held for the last three years.

He works closely with the Dubai Supreme Council of Energy as a member of the Demand Management Committee set up in early 2011 and the HSE Committee set up in 2012. He was appointed Vice-Chairman of the Board of Directors for the Dubai Centre of Carbon Excellence PJSC in 2010 which he contributes actively with his technical background. He has represented the organisation at various events in the UAE and also abroad at forums including those organised by the UNDP. He has been a Board Director representing ENOC as a shareholder since the establishment of the organisation back in 2010. He has worked on and addressed the financial, legal, commercial, strategic planning, technical and manpower development issues within the DCCE with the other Board Members. Waddah is a Fellow of the Energy Institute and an Associate Fellow of the Institution of Chemical Engineers in the UK.

Appendix E: Typical Consent Form



CONSENT FORM

Name of Researcher: Waddah S. Ghanim Al Hashmi

Title of Project: Safety Leadership in High-Risk/High-Reliability Organizations in the context of Operational Corporate Governance with particular reference to the UAE and GCC.

Thank you for considering being interviewed as part of the research. I would be grateful if you would read through the following questions and indicate your response to each of them. The purpose of this is to ensure that you are fully aware of the purpose of the research and that you are willing to take part.

1. I have been informed about the purpose of the study and have had the opportunity to ask questions about it if I wished - YES/NO ☐
2. I understand that I can withdraw from the study at any stage, without giving a reason and that my data will not be included in the research - YES/NO ☐
3. I understand that I am free to choose not to answer a question without giving a reason why - YES/NO ☐
4. I have been informed that the interview will be tape-recorded and I give my consent for this recording to be made - YES/NO ☐
5. I understand that extracts from the recording might be used in a publication at a later date - YES/NO ☐
6. I confirm that I have not been involved in a similar study in the past 6 months - YES/NO ☐
7. I understand that if extracts from the recording are used any identifying information about myself and my organisation will be removed and anonymity will be ensured - YES/NO ☐

I give my consent to take part in the research and acknowledge that by signing this form I consent to information discussed to be used in this study and that the information provided will be anonymised. ☐

Participant

Signed
NAME IN BLOCK LETTERS
Date

Researcher

Signed
NAME IN BLOCK LETTERS
Date

Appendix F: Results of the Pilot Study – Working Question

Statements & Themes

Question	Response on Themes from SMEs	Theme from Lit Review
The Board of Directors (BoD) needs to accept both formally and publicly their collective role in providing health and safety leadership in their organization.	SL; I&A;	Safety Leadership
The consultative process and communication of the health and Safety Policy to all stakeholders is a key role of the BoD and not only the CEO.	SL; I&A;	Developing a Safety Culture and Communication
Health & Safety is the full line manager's responsibility and accountability and not in any way the BoD.	I&A	Safety Leadership
The role of the BoD in Health & Safety leadership should be minimal; responsibility should only be with those who have an expertise in Health & Safety.	I&A; HSE-K&C	Safety Leadership
Each Board Member needs to accept their individual role in providing health and safety leadership for their organization	SL; MEHSP	Safety Leadership
Each Board Member needs to appreciate that their actions/decisions (where applicable) should reinforce the health and safety policies and statements with no contradiction.	I&A; RM	Safety Leadership
The CEO should be clearly reinforcing the decisions made by the BoD even when they are not aligned with the Health & Safety Policy.	I&A; RM; LIS	Influence and Accountability
The BoD needs to ensure that board decisions are aligned where applicable to the health and safety policy statement.	I&A; RM; LIS	Influence and Accountability
The CEO must ensure that business relationships they have with other companies, contractors and service providers who have at least equally as effective EHS policies and management systems.	RM; SL; I&A; OE&EHS	Developing a Safety Culture and Communication & Risk Management
The BoD must ensure that the CEO can demonstrate they have a process to maintain business relationships with other companies, organizations and service providers to ensure they have at least equally as effective EHS policies and management systems.	RM	Risk Management
The Board of Directors needs to ensure that the company managers and CEOs are involving their employees through various methods such as safety committees to improve the safety culture in their organization.	RS&H; OE&EHS; I&A	Developing a Safety Culture and Communication
Safety Culture is a sub-set of the Health and Safety Department's work and not the Organizational Working Culture.	DSC&C	Developing a Safety Culture and Communication
The main driver for improving the Health and Safety for any Board Director should be the Legal Compliance aspect.	LIS; SL	Safety Leadership & Legal Imperative for Safety
Legal Compliance to HSE regulations is the principle responsibility of the Chairman of the Board of Directors through the Audit and Risk Committee	LIS; SL	Risk Management & Legal Imperative for Safety

Question	Response on Themes from SMEs	Theme from Lit Review
The appointment of one of the BoD members as a “safety champion” or otherwise referred to as the “Health and Safety Director”. The champion can be the CEO or the chairman of the Board, but he or she should be assigned formally.	SL; MEHSP; DSC&C	Developing a Safety Culture & Influence and Accountability
As HSE issues are principally operational, the CEO must ensure that the internal controls are set-up to ensure legal compliance to regulations, prevention of any HSE incidents and HSE performance through leading and lagging key performance indicators remains effective.	SL; MEHSP; DSC&C	Monitoring HSE Performance
As HSE is an organizationally significant yet very specialist role the Senior HSE Manager/Director should only report functionally to the CEO.	RS&H; OE&EHS;	Reporting Structure and Hierarchies & Influence and Accountability
The HSE issues should be discussed in the Audit and Risk Committee of the Board.	MEHSP; RM	Risk Management & Monitoring HSE Performance
A separate HSE Risk Committee should be set up that focuses only on HSE Risks and Issues at the Executive Committee Level.	MEHSP; RM	Risk Management & Influence and Accountability
HSE Risk Committees should involve executive managers from the company but no Board Directors.	SL; I&A; MEHSP; RM	Influence and Accountability
As HSE issues have very little to do with future growth, HSE risk management should focus only on present risks and those arising from existing assets/operations	RM	Risk Management & Legal Imperative for Safety
Executive management is principally accountable for setting an agenda to improve and maintain high standards of HSE and safety.	SL; I&A; MEHSP	Safety Leadership & OE & Influence and Accountability
Executive management must not integrate between the HSE risk management and the enterprise risk management (ERM).	RM; SL	Risk Management & OE
Enterprise Risk Management (ERM) should be managed at the Board Level and not the Executive Management Level in an Organization.	RM; I&A; SL	Influence and Accountability & Risk Management
The Chief Risk Officer (CRO) should report directly to the Board and not the CEO.	RS&H	Influence and Accountability & Reporting Structure and Hierarchies
Board Directors must receive some formal training in HSE and Safety. The training would typically include the obligations and responsibilities of company executive officers, employee rights to safe working environments and HSE risk management. This should cover the basic legal obligations of organizations in terms of HSE.	HSE-K&C	HSE Knowledge and Competence
Board Directors must at least once a year review the HSE statistics, incident analysis, improvement programs and other critical information relating to safety culture development and endorse investments and work plans and investments targeted for the same.	MEHSP	Monitoring HSE Performance
The BoD must expect that the CEO has a dedicated quarterly meeting with all the senior managers and HSE specialists to review safety and HSE performance of an organization.	MEHSP; I&A; SL; OE&EHS	Monitoring HSE Performance & Influence and

Question	Response on Themes from SMEs	Theme from Lit Review
		Accountability
The Company HSE Policy should be reviewed and endorsed by the Board of Directors before they are signed by the CEO/MD.	SL	Influence & Accountability
In any incident involving either fatalities/serious injuries of employees and contractors or otherwise significant damage to assets and operations (including operating continuity), the Board of Directors must appoint an investigation team independent of the CEO and company managers.	LIS; I&A	Influence and Accountability & Legal Imperative for Safety
A major HSE hazards risk register and the mitigation measures must be developed by the CEO/MD and their teams and presented at least annually to the Board of Directors.	LIS; RM	Monitoring HSE Performance & Risk Management
Major investments that relate to urgent safety should be approved by the CEO if an immediate credible risk is highlighted with their team without having to revert for approval of the BoD regardless of the Delegation of Authority restrictions as long as a justification note is presented to them in due course for review and approval.	LIS; RS&H; I&A; SL	Safety Leadership, Influence and Accountability and Legal Imperative for Safety
The Board of Directors must push the CEO and their team to apply a target zero for all EHS and Safety Key Performance targets regardless of historical data and performance.	DSC&C; MEHSP	Developing a Safety Culture, Influence and Accountability
The Board agenda must include HSE performance issues to be discussed, even if briefly at every Board Meeting	DSC&C; MEHSP	Safety Leadership, OE & Monitoring HSE Performance

Appendix G: SPSS Data Output File

DESCRIPTIVE STATISTICS										
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
N Valid	30	30	30	30	30	30	30	30	30	30
Mean	5.70	4.97	4.90	5.00	5.10	5.60	4.77	5.50	5.13	4.77
Std. Deviation	.596	1.12	1.29	1.11	.803	.563	1.27	.682	.730	1.00
Oil & Gas	19	19	19	19	19	19	19	19	19	19
N	21	42	36	42	58	37	37	26	47	47
Agree %	74	31	31	26	31	58	26	63	26	16
Strongly Agree %										
Non Oil & Gas	11	11	11	11	11	11	11	11	11	11
N	9	27	36	45	54	27	27	36	45	9
Agree %	81	45	45	54	27	73	54	54	45	45
Strongly Agree %										
Agree %	17	37	37	43	57	33	30	30	47	33
Strongly Agree	77	37	37	37	30	63	37	60	33	27
Agree	94	74	84	80	87	96	67	90	80	60
Total %										
N = 30										
Oil & Gas										
Mean	5.68	5.00	4.84	4.68	5.11	5.53	4.47	5.53	5.00	4.68
Std. Deviation	.582	.882	.279	1.25	.875	.612	1.34	.697	.745	.946
Non-Oil and Gas										
Mean	5.73	4.91	5.00	5.55	5.09	5.73	5.27	5.45	5.36	4.91
Std. Deviation	.647	1.51	1.48	.522	.701	.467	1.00	.688	.674	1.13

	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
N Valid	30	30	30	30	30	30	30	30	30	30
Mean	5.30	4.47	5.80	5.40	5.17	4.97	3.10	5.03	5.07	3.97
Std. Deviation	.702	1.16	.407	.855	1.117	1.15	1.44	1.12	1.01	1.40
Oil & Gas										
N	47	36	36	21	47	42	10	47	37	16
Agree %	36	21	31	60	37	37	26	26	37	37
Strongly Agree %										
Non Oil & Gas										
N	36	27	18	27	18	45	27	27	36	54
Agree %	54	18	81	63	63	36		63	45	18
Strongly Agree %										
Agree %	43	33	20	23	37	43	26	40	37	43
Strongly Agree %	43	20	80	60	47	37		40	40	6
Agree %	86	53	100	83	84	80	26	80	77	49
Total % N = 30										
Oil & Gas										
Mean	5.21	4.58	5.79	5.32	5.16	4.95	3.00	4.79	4.95	3.53
Std. Deviation	.713	1.17	.419	.946	.834	1.17	1.49	1.18	1.12	1.389
Non-Oil and Gas										
Mean	5.45	4.27	5.82	5.55	5.18	5.00	3.27	5.45	5.27	4.73
Std. Deviation	.688	1.19	.405	.688	1.53	.118	1.42	.934	.786	1.10

	Q21	Q22	Q23	Q24	Q25	Q26	Q27
N Valid	30	30	30	30	30	30	30
Mean	3.63	5.33	5.87	5.77	4.90	5.10	5.57
Std. Deviation	1.56	.606	.346	.504	1.06	.960	.568
Oil & Gas %							
Agree	37	58	16	21	47	37	37
Strongly Agree	5	37	84	79	21	42	58
Non Oil & Gas %							
Agree	27	45	9	9	64	36	36
Strongly Agree	9	45	91	82	36	36	64
Agree	33	53	13	17	53	37	37
Strongly Agree	7	40	87	80	27	40	60
Total %	40	93	100	97	80	77	97
Oil & Gas							
Mean	3.63	5.32	5.84	5.79	4.63	5.11	5.33
Std. Deviation	1.57	.582	.375	.419	1.21	1.04	.612
Non-Oil and Gas							
Mean	3.64	5.36	5.91	5.73	5.36	5.09	5.64
Std. Deviation	1.62	.674	.302	.647	.505	.831	.505

Appendix H: Qualitative Analysis Tabulated Results

Transcript No	Industry Type	Sector	Date of Interview	Duration of Interview	Location	Rank	Safety Leadership	Developing a Safety Culture and Communication	Influence and Accountability	Risk Management	Monitoring Performance	Reporting Structures and Hierarchies	Legal Imperatives	Operational Excellence and Systems	EHS Awareness, Knowledge and Competence	Total Statement Count	Board Type	Summarised Emerging Themes and Other Strong Concepts
27	Oil and Gas	Upstream	25th April 2013	21'25"	AUH	SVP	11	13	13	7	11	4	2	3	5	69	Mixed	(1) Process Safety Vs. Personal Safety; (2) Don't Mix ERM and Safety RM
							15.9	18.8	18.8	10.1	15.9	5.8	2.9	4.3	7.2	100		
12	Transport - Aviation	Airport Operations and Aviation	10th January 2013	01'19'47"	DXB	CEO/SVP	20	32	14	24	6	5	9	13	12	135	Mixed	(1) Transparency is Key; (2) Board Structure dependent on Organisational Maturity; (3) Learning Org is very critical; (4) Getting Consensus is critical to alignment.
							14.8	23.7	10.4	17.8	4.4	3.7	6.7	9.6	8.9	100		
8	Oil and Gas	Midstream + Downstream Ops (Refining)	22nd January 2013	56'47"	BAH	DCEO	23	20	12	11	21	2	6	8	12	115	Mixed	(1) EHS critical to Business Continuity; (2) Good EHS = Good Business; (3) Impact of Media has been big on bringing about Transparency; (4) There is an industry wide change taking place.
							20.00	17.39	10.43	9.57	18.26	1.74	5.22	6.96	10.43	100		
9	Oil and Gas	Upstream	7th February 2013	47'15"	AUH	SVP	27	18	12	6	8	2	7	9	6	95	Mixed	(1) Reposting Lines Vs Responsibility; (2) Transparency has become a requirement in the industry; (3) Global & Regional Priorities for EHS; (4) Commercial Drivers can make businesses lose focus on Core Business
							28.42	18.95	12.63	6.32	8.42	2.11	7.37	9.47	6.32	100		
22	Oil and Gas	Upstream	19th March 2013	53'39"	OMAN	CEO/SVP	14	29	12	8	10	5	7	11	13	109	Detached Board	(1) Cost of EHS - It is expensive; (2) Their should be a motivation for Safety; (3) the BoD plays a role in Governance and oversight only.
							12.84	26.61	11.01	7.34	9.17	4.59	6.42	10.09	11.93	100		
29	Oil and Gas	Diversified Midstream + Downstream Ops (Refining)	10th August 2013	25'42"	DXB	CEO	12	9	5	2	7	1	8	3	4	51	Mixed	(1) BoD must play a strong oversight role; (2) Teir has to be full alignment between BoD and EXCOM especially on safety matters; (3) EHS is a Business Driver; (4) There is a strong influencing role when you have international partners
							23.53	17.65	9.80	3.92	13.73	1.96	15.69	5.88	7.84	100		
19	Energy - Oil and Gas	Upstream	14th March 2013	35'41"	BAH	CEO	8	13	6	10	5	3	2	6	8	61	Mixed	(1) Primary Role of the BoD is Corporate Governance and Oversight; (2) Mixed BoD creates better alignment and leverages knowledge of all the members.
							13.11	21.31	9.84	16.39	8.20	4.92	3.28	9.84	13.11	100		
5	Oil and Gas	Diversified Midstream + Downstream Ops (Refining)	21st January 2013	01'08'20"	BAH	SVP	27	34	15	15	11	7	4	7	20	140	Executive or Mixed	(1) Huge impact of Global incidents on shaping the industry attention to EHS; (2) EHS has matured more than CSR, although EHS is a subset of CSR; (3) Sustainability of the business is related to EHS performance; (4) EHS should report into a technical function - makes more sense and then functionally into a senior committee with CEO; (5) Main issue is with adjacent industries not complying and caring so much about EHS/Safety - i.e. O&G do, but construction don't care about having high standards; (6) Primary Role of the BoD is Corporate Governance and Oversight
							19.29	24.29	10.71	10.71	7.86	5.00	2.86	5.00	14.29	100		
21	Energy - Oil and Gas	Upstream	19th March 2013	40'22"	OMAN	CEO	9	13	8	4	6	1	5	6	5	57	Mixed	(1) The Industry as a whole has a culture which influences the company EHS culture; (2) EHS culture is self-driven and is related to good workmanship, and professionalism - this drives a good EHS culture.
							15.79	22.81	14.04	7.02	10.53	1.75	8.77	10.53	8.77	100		

Energy - Oil 1 and Gas	Oil Storage and Movement (Mid-stream)	11th Dec 2012	56'23"	Singapore	GM	18	10	11	8	8	1	4	4	5	69	Executive	(1) Supports having a champion of the BoD; Make up of the BoD is a significant factor to them adding value from a Safety Leadership perspective; (3) BoD have reactive leadership; (4) They naturally focus on Commercial and Financial issues; (5) EHS has to be a very independent Function; (6) EHS is not a key driver - CSR can impact but requires a change in awareness.
						26.09	14.49	15.94	11.59	11.59	1.45	5.80	5.80	7.25	100		
Energy - Oil 6 and Gas	Diversified Midstream + Downstream Ops (Refining)	23rd January 2013	40'38"	DXB	CEO and Country Chairman	18	21	19	17	18	0	7	20	11	131	Mixed	(1) Governance Role of BoD;(2) Preparedness for Recovery from Incidents is Key - BoD must ensure that organisations have the right level of preparedness; (3) There has to be a compliance culture; (4) Must have a culture of continuous learning; (5) Setting high safety Standards is required.
						13.74	16.03	14.50	12.98	13.74	0.00	5.34	15.27	8.40	100		
Energy - Oil 4 and Gas	Diversified Midstream + Downstream Ops (Marketing)	7th January 2013	15'02"	DXB	MD	9	9	4	4	9	2	7	4	3	51	Mixed	(1) Good EHS from the Board must come with a strong vision; (2) Must drive a compliance Culture.
						17.65	17.65	7.84	7.84	17.65	3.92	13.73	7.84	5.88	100		
Power and 20 Utilities	Power and Utilities Services Provider	20th March 2013	31'57"	OMAN	CEO	24	21	13	9	9	3	8	12	5	104	Board Structure Makes No Difference	(1) Embedding EHS into the Business; (2) In terms of Risk Management there has to be very strong alignment between CEO and BoD; (3) CEO has the greatest Impact on EHS as it is leadership by example.
						23.08	20.19	12.50	8.65	8.65	2.88	7.66	11.54	4.81	100		
Energy - Oil 3 and Gas	Oil Storage and Movement (Mid-stream)	9th January 2013	31'11"	DXB	MD	15	5	15	2	14	2	7	9	6	75	Detached Board	(1) Strengthen the Role of Governance and Oversight; (2) Maintain a very independent Role; Separation of roles is critical; (3) Transparency is key to success of the BoD/CEO dynamics.
						20.00	6.67	20.00	2.67	18.67	2.67	9.33	12.00	8.00	100		
Heavy 14 Manufacturing	Construction (On and Offshore)	8th March 2013	24'44"	AUH	SVP	8	19	5	9	5	3	4	7	5	65	Board Structure Makes No Difference	(1) BoD ensures through oversight a sustained EHS performance of an organisation; (2) EHS has a critical impact on Business Continuity; (3) Continual Learning - Learning Organisation.
						12.31	29.23	7.69	13.85	7.69	4.62	6.15	10.77	7.69	100		
Heavy 16 Manufacturing	Smelters	14th March 2013	12'40"	BAH	SVP	15	6	3	2	7	3	3	1	3	43	Mixed	No significant input.
						34.88	13.95	6.98	4.65	16.28	6.98	6.98	2.33	6.98	100		
Transport - 15 Shipping	Oil Tankers - Shipping	10th March 2013	22'20"	OMAN	DCEO	6	11	10	1	6	2	6	6	10	58	Detached Board	(1) Transparency is Key; (2) There has to be a long-term outlook to the organisation; (3) BoD have to set the expectations clearly for EHS and otherwise.
						10.34	18.97	17.24	1.72	10.34	3.45	10.34	10.34	17.24	100		
Heavy 13 Manufacturing	Construction (On and Offshore)	8th March 2013	23'45"	AUH	SVP	12	10	8	10	3	4	8	2	3	60	Mixed	(1) BoD focus is generally on financial issues and a slight focus on EHS; (2) Transparency is very important; (3) Industry itself is setting the tolerance levels and not so much the BoD.
						20.00	16.67	13.33	16.67	5.00	6.67	13.33	3.33	5.00	100		
Energy - Oil 24 and Gas	Upstream	20th March 2013	56'52"	OMAN	CEO	29	38	28	18	19	8	15	21	9	185	Board Structure Makes No Difference	(1) BoD should ask for not typical monitoring data and see performance as much as they should be looking at the trends in performance; (2) Culture of Self Regulation is very important to inoculate; (3) EHS has to relate to the needs of people - it has to be aligned effectively; (4) BoD has to look at EHS performance from a Social Impact perspective - how it impacts society at large not only the organisation; (5) Contradicting Priorities and Business pressures can have a very negative impact on EHS focus; (6) Keeping Systems Simple and Effective.
						15.68	20.54	15.14	9.73	10.27	4.32	8.11	11.35	4.86	100		

	Energy - Oil and Gas	Oil Storage and Movement (Mid-stream)	4th March 2013	33°32'	FUJ	GM	11	15	13	6	17	3	6	6	8	89	Detached Board	(1) Transparency is Key; (2) BoD has to be a very supportive body; (3) It is important that a culture on continual learning exists.
							12.94	17.69	15.29	7.06	20.00	3.53	7.06	7.06	9.41	100		
	Heavy Manufacturing	Smelters	14th March 2013	38°26"	BAH	CEO	18	9	10	8	13	7	16	8	7	98	Board Structure is dependant on the organisation Type and size	(1) BoD is directing as opposed to leading; (2) Organisation must add value socially to a country it is operating in; (3) Size of organisation governs the reporting lines for EHS persons.
							18.75	9.38	10.42	8.33	13.54	7.29	16.67	8.33	7.29	100		
	Energy - Oil and Gas	Upstream	25th April 2013	37°51"	ALH	SVP	23	17	19	9	16	14	5	13	1	117	Detached Board	(1) Clear definition of responsibilities and accountabilities of the BoD and the CEO are very important; (2) Cannot delegate the accountability - it stays with the BoD - they only delegate responsibility and they have a strong oversight; (3) It is very important to have alignment of vision and goals; (4) Detached BoD is more objective and will not interfere in operations - their input will stay strategic.
							19.66	14.53	16.24	7.69	13.68	11.97	4.27	11.11	0.85	100		
	Energy - Oil and Gas	Midstream and Upstream	19th March 2013	29°48"	OMAN	DCEO + BoD Member	12	19	19	11	12	3	9	6	11	102	Does not support Executive Board but rather Detached or Mixed.	(1) Safety and Corporate Governance Overlap strongly; (2) The standards which are set are dynamic and that's the challenge; (3) Morality is very important to consider in this discussion of BoD and CEO behavior when it comes to safety; (4) There are strong financial implications for safety; (5) Reporting lines highly dependant on the nature of teh business and the risks involved; (6) Legal is not a driver it is a strong influencing factor and implications for compliance; (7) Diversity of the BoD is very important to get better EHS governance; (8) Diversity is key more than Board Structure.
	Energy - Oil and Gas	Oil Storage and Movement (Mid-stream)	24th December 2012	21°03"	DVB	GM	8	15	11	5	3	3	4	6	5	60	Executive	(1) Alignment of the vision is very critically important; (2) Give the top guy the full ownership for Safety - BoD is an advisory body
							13.33	25.00	18.33	8.33	5.00	5.00	6.67	10.00	8.33	100		
	Aviation	Aviation Operations and Navigation	31st February 2013	31°34"	DVB	GM	10	15	16	9	9	6	4	8	8	88	Board Structure Makes Little Difference	(1) There is a string and direct impact of BoD behavior on the safety culture - absolutely critical; (2) HROs - focus on the core business and thus the core business risks; (3) We have to understand that unless the EXCOM is pushing hard the BoD, they will develop an appetite for risk; (4) Aviation Industry are focused heavily on internal controls and governance rather than regulations; (5) BoD must understand the financial impact of risk management; (6) Aviation focus has been greatly on process safety rather than personal safety; (7) Need to understand Human Factors carefully; (8) Board Structure does not matter - it is more about preparation and engagemnet of the CEO and BoD in matters.
							11.76	17.65	18.82	10.59	10.59	7.06	4.71	9.41	9.41	100		
	Heavy Manufacturing	Construction (On and Offshore)	21st January 2013	33°30"	BAH	DGM	13	17	16	14	9	1	11	8	12	101	Mixed	(1) Supports having a champion of the BoD; (2) Commercial and Financial Focus detracts BoD from focusing on Safety; (3) EHS is about Ethics and Humanism; (4) Operational vs. strategic - industry accepts that the BoD are not technical so their input in EHS matters is limited.
							12.87	16.83	15.84	13.86	8.91	0.99	10.89	7.92	11.88	100		
				Totals			400	438	317	229	262	95	174	207	197	2319		
				% Totals (Av)			17	19	14	10	11	4	8	9	8	100		
				% Totals (Cumm)			18	19	14	9	12	4	8	9	9	100		

Appendix I: Example of a Transcript

Transcript Reference No. 6

Details of Interview:

Date – 23rd January 2013 – 1230 Hrs.

Transcript Recording Duration= 00:40:38

Transcript Starts:

SL = IIII IIII IIII III (18)
 DSC-C = IIII IIII IIII IIII I (21)
 IA = IIII IIII IIII IIII (19)
 RM = IIII IIII IIII II (17)
 MASP = IIII IIII IIII IIII (18)
 RSAP = Operational excellence (0)
 LIS = IIII II (7) OE = IIII IIII IIII IIII (20)
 GHS/K+C = IIII IIII I (11)

Governance

Researcher: So good afternoon again, thanks for meeting with us. I would like to ask you what kind of role do you see that the board of directors organisation such as yours provides health and safety leadership?

→ "Governance"

Respondent: So, it's very evident that the board of directors has a key role in any form of governance in any major corporation to provide that scrutiny around all aspects of the corporation's activities at a very high level to make sure that good governance is being maintained by the directors of the corporation specifically to health and safety. In our business it's a prerequisite so the boards interest should be and is high in insuring the goals that we have which become challenging, more challenging year on year because we want to get to zero incidents, zero injuries and zero fatalities. The boards roles should be to have a pretty good understanding of why we are driving towards that, and it is to insure the safety of individuals in the organisation, to insure consistency and performance and to protect assets and people frankly. And so they need to understand why we are drawn to that and all board members are well versed in the core aspects of safety procedures and why the company directors need to take such an active role in respect and I think they are also very well attuned to the impact of not focusing throughout the organisation and at the senior level on the metrics and the processes that need to be put in place. The high level of the big processes and the big metrics to insure that the board can monitor and have a view on progress towards achieving those metrics and getting better year by year. So I think in our business the board does understand why it's important for them and the directors of the company to steward, safety performance in its crudest sense or a broader operational excellence risk management and the impact of doing it in terms of the measures and the metrics to tell

Emerging Themes Noted:-

Governance (1); Regulation King (15); Corporate Culture (10)
 Safety Standards (11); Continuous Learning (12).

themselves and to be clear on how they are holding the company accountable to development.

Researcher: In terms of, do you see that more driven because of them looking at the business according to sustainability of the business or looking it more as a sort of a covenant that they have with the stakeholders as representatives of the shareholders?

Respondent: It's a very good point so I guess in our business and with a history of the oil and gas companies - in our business have been around for you know over a hundred years and the covenant you talk about is pretty explicit. We have something called the Chevron way, and so all employees are pretty clever on what the Chevron way means and there's copies on the table here and it's to make sure that we are high performing and that we are number one in the areas of safety, reliability and profitability and we want to be better in terms of total shareholder return than our competitors. And embedded in the Chevron way there's aspects of leadership, there's aspects of safety there's aspects of trust, integrity and a lot of high level values which all employees should be aware of and we should embody in our behaviours. So that's the kind of the covenant if you like that all employees should have to act with versus stakeholders to employees with business partners, suppliers to really make sure that we are acting in the right way. When it translates in more detail to our OEHES safety performance it's very obvious that we are in incredibly high risk business. To manage those risks primarily to insure that the people we employ go home at the end of the day with ten fingers and ten toes. If they came here to work with ten fingers and ten toes then we want them to go home at the end of the day with ten fingers and ten toes so that nobody gets hurt because we don't want to be in the business of hurting people but we are in a very high risk environment. So, we have a duty of care to employees and I think everybody at a senior level understands that. We've also established that by being by having well established processes that we follow and make sure that they are stewarded with leadership accountability that it will reduce the risk in those high risk operations and the ultimate output of that is successful project delivery and successful financial performance so we are very clear that strong safety performance and strong

EHS performance are really tied together so ultimately we don't just want to be profitable there's no point, we have to be a safe company that operates on integrity and that in itself by managing the risk in the right way will also lead to profitability. As we are you know a publicly trading company we got shareholders to respond to and they are on board with our message in that respect as well.

Researcher: So, in that sense as company governors you know the board of directors, how do you feel they should engage in EHS development matters?

Respondent: So I'm not, I don't sit with the board of directors of our company. I'm quite well removed from them but the directors that I do know of the board that we see speaking publicly talk very overtly about their knowledge of core aspects of safety performance in our business, our safety processes that are instrumental. I'll use an example, the chairman who in his annual address most recently talked about process safety management as being a core focus through last year and into 2013 and he could talk very articulately about some of the key concepts of process safety management and why that's important to our business besides some specific examples so as the chairman and CEO and therefore a member of the board its very obvious that those conversations do take place. Now to the extent to your question that the whole board is into finer detail of long aspects of driving EHS policy. Yeah I think it's there to validate and verify and make sure there's good governance in place they will not get into the absolute detail of EHS policy.

Researcher: Yes, that's ok. Basically to what extent should they engage with the whole concept, I think it's more formal in a sort of setting a tone direction and endorsing what comes back.

Respondent: Quite, absolutely and so the board of directors will hold its board meetings outside of the corporate head office and hold board meetings in geographically diverse locations around the world, large upstream production sites either onshore or offshore, gas facilities that we have as a periodically the board will be going out and holding board meetings there and a key part of doing that is to understand how in the field what we talk about in terms of business performance but also safety performance is being

deployed. So I think that there is a very strong awareness and quite open questions will get asked to probe and understand how the field interprets deploying process standards and safety standards that are agreed and focused on at a very high level in the corporation.

Researcher: In terms of when we talk about accountabilities, how do you feel? What kind of accountabilities do they carry as opposed to executives, chief executives and chairman of the operations, vice presidents, whatever you call it. I mean more of the people who I have basically in charge of the business units who are reporting into the CEO the chairman. What kind of accountabilities do you think they have as compared to the directors and do you think that they sort of are all clear on their accountabilities?

Respondent: If we're clear that the major directors or lines of business leaders are really accountable for delivering the safety performance. I think the directors who are removed from the operation, I would assume, not having met them except for one, they are all very clear of their roles as leaders to steward and the process to insure that high level vision is clear. The chief executive and the directors are enabled in terms of resources and manpower to prioritise what they need to do to ensure that we maintain, sustain and improve on our safety performance. It's kind of like, it's the first thing that we would talk about as I mentioned to you before in any of our meetings and as part of our business conduct is to be a safe partner in communities where we operate and in business that we conduct. So I think the board has got a high level of accountability for insuring the right kind of questions are asked and that the company is enabled through the chief executive chairman and the directors to have and to reprioritise and ensure as strategies are deployed. There done in a way that isn't going to compromise on that foundational strategy which is to be a safe operator where ever we are.

Researcher: In terms of you know, what would you say the risk management approach is therefore are different. I mean obviously I'm not talking about what exactly the tools it is, but how is your approach different in terms of risk management. Do you feel at the board level when it compares to the same sort of people we are reporting into the board. How is the risk management different?

Respondent: I'm going to have to honestly reply that I have absolutely no idea of what conversations go on around risk management at the board level of our company. I'm not, I just, I would guess and that would be the wrong thing to do. Yes I mean they are talking about safety so what I'm quite confident they are doing is talking about future trends, they are talking about major aspect of enterprise, risk management when they are looking at a pipeline of projects that goes out in 20, 30, 40 years in our case when you talk about large upstream oil and gas projects, but again this is my uninformed view but basis of my knowledge of the company. That's really where their view of risk management is. The very degree of reactionary discussion as crises develop, which is typical in areas of the world that we operate, so I think the board is going to want to have an understanding in us that the chief executives and directors have response plans in place around aspects of risk that's probably more reactionary. So that's my uninformed view.

Preparedness
is key!

↳ Preparedness - Crisis

Researcher: Well, that's the reason for the question because you know we spoke about the role we play in terms of monitoring. So, you'd imagine that they are not using exactly the same kind of risk management approach or tool or level whatever because you know you are monitoring your reviewing effective, you're reviewing maybe your risk assessment is making sure that did you do a risk assessment kind of approach makes sense. How often do you think the board is informed of EHS performance or OEMS performances?

Respondent: I would imagine that it's going to be you know a monthly if not weekly affair. You know, I know that there's dashboards that are used throughout our organisation and the cadence of which is to make sure it's fit for purpose so any organisation whether its' purely operational, environment or it's a commercial environment. Even the commercial environment on a monthly basis will talk about their OEMS performance. So communicating and reporting that up, you know the frequency on which the board meets, whatever the frequency of the board will meet at a minimum is when they will talk about OEMS performance

Researcher: So basically, possibly every meeting.

Respondent: No, definitely every meeting. Every meeting I would, I cannot imagine a time that the board would meet, um coz they would meet quarterly. Let's say when a standing agenda item would not be the OEMS performance unless it's an extraordinary meeting that's called for a specific item.

Researcher: So basically that would be something which is an expectation also from the chairman of the board.

Respondent: Let me rephrase it this way, so if the expectation is that for every meeting that any of us start the first meeting of every day in Chevron should start with a safety moment ok, and then we will move on to commercial business so I can just imagine if a board is meeting to review the performance of the company right that's what we are talking about at the board meeting unless its convened for an extraordinary matter pacific agenda item sitting on some smaller boards that Chevron's involved in and seeing what agendas look like. The standard um it's pretty reasonable to expect a stunning agenda item to be the OEMS health and safety performance of the company.

Researcher: Do you think that the most senior EHS representative should report to anyone other than the head of the organisation, in terms of reporting structures?

Respondent: So, um

Researcher: I must say this is, sorry I must say that this is I know a difficult question to ask of Chevron because you have these OEMS champions so it's a bit more of a semi hybrid system that you have applied but maybe from Chevron's approach.

Respondent: Yes, from our perspective it's not, I mean there's no one person that is in charge of and insuring and stewarding safety performance through the organisation and with that in mind there's no need for relevance in having a one person elevated to have sole responsibility for that reporting to the board and the reason being that it is expected, you talked about expectations, it is expected that everybody in the company has a foundational level of understanding around safety, doing something safely or not

at all and always taking the time to do it right and so there are numerous individuals throughout every organisation there to support the deployment of certain key processes and safety standards. In its crudest sense and then everybody at the management position has accountability built into their performance management agreement so therefore their.....um what their gonna do to ensure their own organisations to be safe and then be profitable and sold and so forth. It's a collective effort and it starts with the leadership accountability of every manager and every director and that will be driven through the organisation in that way and it's just implied and understood that it sits on the shoulders of everybody. So no is the answer to your question in our sense.

Researcher: That's why I said,. Um. Would you?

Respondent: So let me flip back and add in some context so a company that is far less developed in terms of the cultural development of this. It may require focused effort at a more senior level to help educate and drive and understanding at a senior level around the importance of these aspects. Firstly, at a senior leadership level to understand again a cultural change if an organisation hasn't fully embraced the importance if they are in a high risk environment of focusing on the core aspects collectively as a leadership team of OEMS safety standards. That might be ways of driving out change but the fundamentals have to be understood by and believed in by those individuals appointed into their roles as board members and directors. You can't half believe in it so maybe an elevated role can help lead the horses to water but the horses have to also know why they're gonna drink.

Researcher: I like that. I'm gonna remember that. I'll quote that.

Respondent: Somebody else said it far before me, I don't know who it was.

Researcher: To what extent does the legal requirements you think for compliance influence and drive the approach in terms of performance - you think that. I mean also I mean legal in two senses you know. One of them is the regulations which are there, which are set by whatever authorities where we are operating depending on the industries upstream, downstream, midstream and also in terms of legal, I'm just trying to explain what how my question in regards to legal drive.

And the possibility of litigation in case of possible some sort of incident happening.

Respondent: Yes, we work in a highly regulated environment all over the world and irrespective of the local rules and regulations there's a ship on standard that will apply everywhere so we hold ourselves typically to standards that are often higher than even the local regulatory frameworks, which makes it hard to do business in lots of parts of the world. But, as a U.S company that's quoted in the U.S and bound by the legislation that American law has in place. It means that there's limited room to deviate from that and so I think the legal considerations are evident but their commonplace and well understood it just it doesn't drive, it is a factor in making sure we are compliant. I think overall we often set standards that can be higher and that's because we are very risk averse, we want to manage the risk on the downside of something as you've described in your question, adverse happening because we didn't take a more conservative stance. Now, we want to make sure we balance that versus commercial opportunities that are there, to make sure we don't ignore an opportunity because we are being too risk averse but it again I'll go back to. We will always take the time to do it right or not at all and make sure we do something safely so we won't engage in an activity we haven't managed that risk and well understood the implications any potential legal ramifications but I think our. As I said, our U.S company that follows legislation that we do we will always ensure that we've mitigated and understood the legal implications.

Researcher: Do you think it's different, do you think I mean what you just described. Would you say it's different at the person senior most operating level at the board of directors? Is it similar?

Respondent: You know what's quite interesting, every employee in our company has to go through core sets of training, computer based training and it's tracked. So we track and monitor and I mean every employee. They are expected in what they do, and we will make sure training is available in local languages Spanish, Arabic Chinese or Mandarin even. There's business management and ethics training, there is core safety training. There is ergonomic training to make sure you are you know working at your desk in an ergonomic fashion and touching on the legal there is compliance training that

everybody will go through to know how to abide by certain key laws, that we are bound to as a U.S company and that employees may put themselves in compromising positions if they don't follow those. So, on a basic level I think everybody in the company should understand those core principals because we are trained on them annually.

Researcher: In terms of, I've actually a question about the tools that you use to setting an agenda to improve and maintain high standards at EHS but I think I will say that you are using the OEMS just to ask about Chevron. How long has it been I mean its been obviously a few years and I think its been deployed in Chevron. In the U.S I know that there was a lot of development of safety champions or OEMS champions around. How long has it been around for?

Respondent: Um. Crikey its gotta be at least, I think it was the Chevron prior to the Chevron and Texaco merger, so it goes back over a decade. Maybe more, I think it may be even 15 or 20 years so the OEMS the operational excellence management system is a Chevron proprietary and as you have mentioned previously there are other parallel models in some of the other oil majors. So we have ten pillars or principles of operation of all excellence so these are ten guidelines which I think go back yeah its gotta be 10 to 15 years minimum I would say. So these principles of operational excellence will,

Researcher: I've seen this in fact I've seen also companies like in Bangkok they got something else they've called it actually given it an Arabic name. They called it something but they not exactly the same but they're very similar kind of.....

Respondent: Yes so these are kind of ten gallon principals. And then below that there's again a proprietary system but theres below that a series of high level processes and then below that a large series of sub processes up to about 46 which should group together all the key sets of aspects around dos and don'ts to make sure that we are operating safely, reliably and taking into account the health of individuals. So, that's one of them, that's the kind of primary system that is used in Chevron. Now, in sub systems at certain groups may or may not use, so as a I think I mentioned to you once before

LPS which is the loss prevention system, now it's not its Chevron pays to use that under license so the loss prevention system is U.S based. LPS ink has developed and runs this tool. I think Exxon also uses LPS and so that focuses on preventative observations and measures to systematically review the business and by observing critical tasks that have well defined processes for them. You can look for potential losses that might have occurred if somebody hasn't followed the processes right. This could be driving a truck or it could be operating a drill, it could be moving a large piece of equipment and so by stopping and assessing the risk before you undertake that activity and going through the process and observing one another you kind of pre empty the risk that might happen. So that is how LPS is another tool that's used and there are whole host of others that we deploy throughout the business but the key one as you said is the OEMS and it dates back I think 10 to 15 years.

Compliance Culture
Compliance

Researcher: Ok. You spoke about I mean initially when we started the discussion you did mention that the board of directors have got, you said that they are aware, I mean maybe this question not maybe about Chevron only. Do you think I mean from your experience in the industry and perhaps in the great industry, I mean you've come also from the aviation industry which is also a high risk industry? Do you think general board directors have got that sufficient awareness, knowledge in EHS? I'm talking more general.

Respondent: So, again not knowing personally our directors but knowing and seeing the messages that come from the chairman as a member of the board and frankly with taking on a directorship the fiduciary duties that you carry one would hope that anybody who takes on the role of a director understands their duty of care to fulfil that role in its fullest and it's a role not to be taken on lightly. I'm quite sure our directors, non-executive directors they're remunerated for what they do and returned for that they equally have a degree in responsibility to understand the risks of being a director and so yes is the short answer. I believe that the majority of voters do understand their responsibility in that respect because it does carry with it you know in some cases it does carry personal liability and responsibility.

Researcher: But besides obviously you know, do you think they have sufficient basic, I don't use the word technical training coz they're not technical people and they don't need to have real technical knowledge. Do they understand you know for example causality that you know we've had a pipeline you know sort of rupture a huge sort of oil spill in a very sensitive area? This has been caused by because you know we actually stretched the maintenance and the asset review programme. That was because of this and because of decisions that were made in the last 3 years which caused us eventual deterioration. Do you think they have a lot of them have got the knowledge to connect that particular incident to the real root causes?

Respondent: So um we, so you talk about root causes, we they will either connect it for themselves very quickly or with information that will be brought to their attention very quickly be able to make very informal decisions with the system in our company that goes behind it to clearly identify and get to systemic problems should they arrive in your hypothetical situation that was just described. So for any major incident that we have in our business, there is a major incident study that is conducted. We use either tap root analysis which is another name or some kind of incident investigation reporting system to really go through the in diligence process that will help us get to the true root cause of that issue and we avoid a systemic failure in the future. In our business last year people died, ok, people do pass away every year on the job and the chairman of the board, chief executive and chairman reviews every single root cause incident or accident investigation where at fatalities involved. As a matter of cause we'll do verifications on solutions that have been put in place from historical problems to verify that they are actually being sustained in the business so um..

Researcher: So, effectively what you are saying is the organisation is sort of effectively growing in its intelligence and becoming more and more aware because it's taking the data from the previous and then putting that together and.....

Respondent: And changing systems and processes where they need to be absolutely. We have a target of getting to zero. We believe that zero is attainable, zero fatalities,

Setting standards.
Getting them towards?!
↓

zero spills, zero incidents, zero motor vehicle crashes and what doesn't get measured doesn't take effect get managed so we measure an awful lot in our business to make sure its managed to the point where we manage the risk out of the business to the best exempt we can. The critical thing in this is there's no punishment process that goes along with this so we encourage and have still on the journey to encourage reporting openly to make sure people are always comfortable to stop a situation if something doesn't look right and we have this theme around stop work responsibility. So anybody in the business walking through, if I'm walking through a refinery for the first time and I ask a question say I'm not sure about why that is happening, it doesn't look safe to me. Can somebody explain what's going on? That's acceptable. If I'm a junior person and I'm talking to the refinery manager, the refinery manager will stop and answer that person and say no you raise a good question maybe we could be doing it differently or explain this is the process and don't worry because of these controls are in place. So, it is organic and it should be a continuous learning organisation that encourages us to prove in all of these irrespects.

Continuous Learning "Continuous Learning Culture"

Researcher: Do you think that I mean today, people like Chevron obviously many leaders in this sense. The board directors are pretty aware perhaps in the industry it's not all the same. I mean we have different boards with different you know. There are certain boards where board directors have really been placed there because of more ceremonial positions. They have really good networking abilities, stuff like that. So they have, maybe they're not as engaged in terms of looking at the EHS, the risks, the organisation etc. Do you think that's gonna change in the next 10 years, do you see that changing?

Respondent: You know so I look out to, you talking about our industry or corporations in general?

Researcher: I'm talking about high risk industry, I mean manufacturing oil and gas, aviation

Respondent: So it depends, what to you term as high risk? So is banking high risk these days?

Researcher: Well I'm talking about high risk in the sense you can well I guess you can kill people in the banking industry. A lot of people have heart attacks, lose lot of money.

Respondent: So yes, I mean I think it's, it should be so I think an effective board of directors for any top 100 fortune company or public equity company or the leading marketer in any country, I think it's to be and again I stress I don't know our board of directors. I've met our chairman and chief executive and many of them are probably placed there because of their contacts in industry but its, my bosses boss will say it's not an all-world it's an and world. So individuals are in these roles because yes they may have good contacts and they understand finance issues and they need to be confident in understanding the risks and our OEMES requirements and be able to steward that at a high level. So, that's also what is expected of all of us as senior leaders in the business we have to deliver profitability. We have to be safe and profitable so we wanna be safe and profitable and reliable, not safe or profitable and so if we are striving to the better on all fronts and ask that our leaders and directors are better. Then I can only imagine that competitors in our industry and in high risk organisations are also continuing to strive because in a world where people are competing for capital, then I think it's the companies that are doing better in all of those fronts that are more likely to be successful.

Researcher: Yes. One last question before we close which is again, Nabil always tells me that my questions are always very difficult. But um, generally there are three types of boards in organisations. There's the executive board which is similar to what Chevron has at the moment where the CEO is actually the chairman at the same time, and then you have the detached type where you know the CEO is really not part of the board and the board members are independently so they might be also independent board members but he is not a board member he is just a CEO similar to what we have, and then there's the mixed board where you have you know maybe the CEO and maybe the CEO and the CFO are actually board members yeah. But they, there's only two of them, all the rest of them are the board members and the CEO actually in this case is not a chairman he's a

board member but he's not a chairman of the board. Just hypothetically speaking if I just say, which one of those do you think will be most effective in terms of safety leadership or does it depend on the maturity of an organisation?

Respondent: I think it depends is a good answer to both of those questions. So Chris Bradley, personal opinion, nothing to do with the view of our company. But, being a Brit, having come out of Great Britain the governance model typically and I've actually been further encouraged in this direction after some governance issues, financial challenges. The third option i think is the healthy option because it ensures that you have....

Researcher: The mixed option.

Respondent: Well you have a chairman that has an ultimate responsibility to the board. The Chief Executive can participate at the table but the Chief Executive is not the chairman of the board. Right. I think that the chief executive has an important is an important conduit of information so he should sit at that board seat. When you concentrate power base with the chairman and chief executive the legal reforms that have come out of the U.K. Um, Frank Dodds act, I can't remember, so that was the U.S Frank Dodds.

Researcher: Turnbull

Respondent: What was his name? So many requirements were recommended that all companies above a certain level have an independent chairman.

Researcher: Oh yes the separation between chairmen.

Respondent: Yeah, so that's my personal view. Now in our organisation we have a chairman and Chief executive, chairman of the board and chief executive and our culture is so well developed and progressed in all aspects of OEHS and its so prolific, that the people understand it's the core components of their job. That I think that our model works just fine and so I think to be honest to your second question, it depends. Yes, it does depend; yes it does depend on the nature of the maturity of the sustainability of the cultural environment in that company. If it's not as advanced then I think you absolutely need to ensure that maybe like accountability is held and driven

Suggest "Mixed Board"

down to drive more cultural change in high risk organisations that aren't paying enough attention at a senior level and more broadly across the business.

Researcher: Ok. Well I mean that finishes, completes my questions to you. Is there anything else that you would like to say or add to this, any final thoughts?

Respondent: No sir, if I could just make myself available if there's questions that come out of this that you want to follow up. You know I recognise that part way through this I'm speaking on my perception of the company from my point of view and with limited knowledge of what goes on at our board meetings at the most senior level of this company. But if there's follow up questions that you specifically want to ask or have me actually find out to give a more thoroughness in answer, more than happy to engage and get the perspective recognising it's for some important research. I'm happy to do that.

Researcher: It's highly appreciated, thank you so much. Thank you.

END

Appendix J: Board Structure Feedback Summary

Board Structure best for Safety Leadership	Percentage of Total Respondents who support this type of Board Structure	Cited Reasons for why the support their view on Board Structure
Mixed Board Structure (CEO is a Board Member but not a Chairman or Vice Chairman)	53.8%	<p>The respondents supporting this Board Structure cited:</p> <ul style="list-style-type: none"> (1) It brings about better alignment between Executive Management and the BoD; (2) Gives the CEO and some executives who are knowledgeable about the business to better contribute to the major decisions made which can impact on EHS and Safety; (3) There is a better chance for the BoD members to understand the implications of the decisions they make, especially commercial and expenditure related which can impact on EHS and Safety; (4) You end up getting better engagement from both Executive Team and the BoD.
Detached Board Structure (CEO is not a Board Director)	23.1%	<p>The respondents supporting this Board Structure cited:</p> <ul style="list-style-type: none"> (1) There is clear and delineation of the roles and responsibilities between the Executive and the BoD. CEO is accountable; (2) Maintains as they put it better "Corporate Governance and Oversight" especially for safety issues where they can be major incidents; (3) Ensures that the BoD makes more objective decisions as they are not influenced too closely by subjective decisions from the CEO and his team who may want to go ahead for a particular reason; (4) Ensures that the BoD members remain as an independent body.

Board Structure best for Safety Leadership	Percentage of Total Respondents who support this type of Board Structure	Cited Reasons for why the support their view on Board Structure
Executive Board (CEO and Chairman are one person)	11.54%	The respondents supporting this Board Structure cited: (1) If Safety starts at the top, then the Chairman as the CEO will ensure safety issues are dealt with no compromise! (2) No issues with misalignment between BoD and Executive Team; (3) BoD become very effective advisors for ensuring the decisions are made are balanced.
Executive or Mixed Board Structure supported	3.8%	As above
Detached or Mixed Board Supported	3.8%	As above
Board Structure Makes Little Difference	15.4%	The respondents supporting this Board Structure cited: (1) Safety and EHS is about responsibility and accountability so it is not the Board structure that will be the reasons for better or worst safety leadership and culture within an organization; (2) It depends more on the optimum number of Board members who have varied experiences; (3) It depends more on the diversity of the Board rather than the structure of the Board – EHS is all about people; (4) The Board structure will continue to depend more on regulations and international best practice and Safety/EHS matters would be absorbed within those structures.
Board Structure Depends on Organization	3.8%	The Board structure depends on the organization and the impact on safety leadership depends on that organization rather than the Board structure. The Board structure is related to the types of shareholding and general leadership.

Note: data from 26 respondents.

Appendix K: Emerging Themes Matrix Tables

Themes	Safety Leadership	Developing a Safety Culture + Communication	Influence and Accountability	Risk Management	Monitoring EHS Performance	Reporting Structures and Hierarchies	Legal Imperative for Safety	Operational Excellence	EHS Knowledge and Competence	Emerging Theme
Leadership Matters:										
<ul style="list-style-type: none"> Safety Leadership Style has to be through Leading by Example – CEO has the greatest Impact on EHS as it is leadership by example. 										Safety Leadership
<ul style="list-style-type: none"> As the BoD have an oversight role, it is expected that their leadership will be a reactive leadership style. 										Directing - Passive Leadership Style
<ul style="list-style-type: none"> Alignment of the vision between CEO/MD and the BoD is very critically important. 										Developing a Safety Culture + Communication
<ul style="list-style-type: none"> EHS culture is self-driven and is related to good workmanship and professionalism - this drives a good EHS culture. Leaders need to be able to nurture this within their organizations. 										Developing a Safety Culture + Communication
<ul style="list-style-type: none"> There should be a motivation for Safety. This is the role of the Leadership team – to create that motivation for employees. 										Safety Leadership
<ul style="list-style-type: none"> There is a strong and direct impact of BoD behavior on the safety culture - absolutely critical. 										Observed Leadership

Themes	Safety Leadership	Developing a Safety Culture + Communication	Influence and Accountability	Risk Management	Monitoring EHS Performance	Reporting Structures and Hierarchies	Legal Imperative for Safety	Operational Excellence	EHS Knowledge and Competence	Emerging Theme
Strengthen the Role of Governance and Oversight – Potential Solutions cited:										
<ul style="list-style-type: none"> Maintain a very independent Role and therefore the separation of roles is critical. 										Separation of Roles
<ul style="list-style-type: none"> BoD ensures through oversight a sustained EHS performance of an organization. 										Monitoring EHS Performance
<ul style="list-style-type: none"> EHS has a critical Impact on Business Continuity. Therefore EHS is a Business Driver. BoD must appreciate that Sustainability of the business is related to EHS performance. 										EHS as a Business Value Driver
<ul style="list-style-type: none"> There has to be a long-term outlook to the organization rather than a short term view of things especially when they relate to EHS and sustainability of operations. 										EHS brings Sustainable Value
<ul style="list-style-type: none"> Some CEOs/MDs support having a champion of the BoD but this was more the minority. 										Safety Leadership
<ul style="list-style-type: none"> There has to be full alignment between BoD and EXCOM especially on safety matters. Getting consensus is critical to alignment. 										Alignment of Vision of EHS matters
<ul style="list-style-type: none"> We have to understand that unless the EXCOM is pushing hard the BoD, they will develop an appetite for risk 										Risk Management

Themes	Safety Leadership	Developing a Safety Culture + Safety Culture + Communication	Influence and Accountability	Risk Management	Monitoring EHS Performance	Reporting Structures and Hierarchies	Legal Imperative for Safety	Operational Excellence	EHS Knowledge and Competence	Emerging Theme
Key Challenges for the Board and Current Realities:										
<ul style="list-style-type: none"> BoD focus is generally on financial issues and a slight focus on EHS. They naturally focus on Commercial and Financial Issues given their role as shareholder representatives. 										Commercial/Financial Drivers Compete for EHS issue-attention/Conflict
<ul style="list-style-type: none"> The standards which are set have to be dynamic and performance related and that's the challenge as thus a deeper understanding of risks and risk control strategies is required of the BoD members. 										Operational Excellence & Risk Management
<ul style="list-style-type: none"> It is critical to embed EHS into the Business. It is sometimes difficult to do this as these needs time and culture change within an organization. 										Embedding EHS as a Key Organisational Value Driver
<ul style="list-style-type: none"> BoD members don't always have enough basic awareness and information that will allow them to add value in terms of delivering advice and oversight to matters which may be related to EHS. Sometimes this is because they are not even from that industry. 										EHS Knowledge and Competence

Themes	Safety Leadership	Developing a Safety Culture + Safety Culture + Communication	Influence and Accountability	Risk Management	Monitoring EHS Performance	Reporting Structures and Hierarchies	Legal Imperative for Safety	Operational Excellence	EHS Knowledge and Competence	Emerging Theme
Potential Issues for the Board:										
<ul style="list-style-type: none"> Contradicting/Conflicting Priorities and Business pressures can have a very negative impact on EHS focus 										Conflicting Priorities is negative on EHS
<ul style="list-style-type: none"> Mixing ERM and Safety RM may cause dilution of the focus on EHS. 										Risk Management
<ul style="list-style-type: none"> Industry itself is setting the tolerance levels and not so much the BoD. This creates a challenge for the BoD as they must try to understand why the industry shifts are such, especially if they are not experienced in that industry. 										Industry Driving Change and Focus
<ul style="list-style-type: none"> Clear definition of responsibilities and accountabilities of the BoD and the CEO are very important. 										Influence and Accountability
<ul style="list-style-type: none"> Cannot delegate the accountability - it stays with the BoD - they only delegate responsibility and they have a strong oversight 										Influence and Accountability
<ul style="list-style-type: none"> Commercial Drivers can make businesses lose focus on Core Business 										Commercial/Financial Drivers Compete for EHS issue-attention/Conflict
<ul style="list-style-type: none"> Cost of EHS - It is expensive even if it is an investment into something that can or cannot happen. 										Financial Investment for EHS issues required

Themes	Safety Leadership	Developing a Safety Culture + Communication	Influence and Accountability	Risk Management	Monitoring EHS Performance	Reporting Structures and Hierarchies	Legal Imperative for Safety	Operational Excellence	EHS Knowledge and Competence	Emerging Theme
Suggestion - Analysis not only monitoring:										
<ul style="list-style-type: none"> BoD should ask for not typical monitoring data and see performance as much as they should be looking at the trends in performance. 										Analysis of Performance vs. Monitoring Performance only
<ul style="list-style-type: none"> They should make sure that the management are keeping systems simple and effective and not too complex. 										Operational Excellence

Themes	Safety Leadership	Developing a Safety Culture + Communication	Influence and Accountability	Risk Management	Monitoring EHS Performance	Reporting Structures and Hierarchies	Legal Imperative for Safety	Operational Excellence	EHS Knowledge and Competence	Emerging Theme
Alignment, Structure & Reporting Lines Related:										
<ul style="list-style-type: none"> Size of organization governs the reporting lines for EHS persons 										Reporting Structures and Hierarchies
<ul style="list-style-type: none"> It is very important to have alignment of vision and goals 										Alignment of Vision of EHS matters
<ul style="list-style-type: none"> Some suggested that a detached BoD is more objective and will not interfere in operations - BoD input will stay strategic. 										Board Structure stay detached
<ul style="list-style-type: none"> Board Structure does not matter - it is more about preparation and engagement of the CEO and BoD in matters 										Board Structure not as important as engagement of BoD/CEO
<ul style="list-style-type: none"> Reporting lines highly dependent on the nature of the business and the risks involved. 										Risk Management
<ul style="list-style-type: none"> Makeup of the BoD is a significant factor to them adding value from a Safety Leadership perspective. 										Make up of Board
<ul style="list-style-type: none"> Diversity of the BoD is very important to get better EHS governance. Diversity is key more than Board Structure 										Board Diversity is very important
<ul style="list-style-type: none"> Board Structure dependent on Organizational Maturity 										Org Maturity should govern Board Structure
<ul style="list-style-type: none"> The BoD plays a role in Governance and oversight only but it must be must be a strong oversight role. 										Oversight Role must be strong from BoD
<ul style="list-style-type: none"> Primary Role of the BoD is Corporate Governance and Oversight 										Oversight Role from BoD
<ul style="list-style-type: none"> Mixed BoD creates better alignment and leverages knowledge of all the members 										Board Diversity is very important
<ul style="list-style-type: none"> Reporting lines don't always define the responsibility lines. Again it is transparency and better communication systems which are critical. 										Transparency

Themes	Safety Leadership	Developing a Safety Culture + Communication	Influence and Accountability	Risk Management	Monitoring EHS Performance	Reporting Structures and Hierarchies	Legal Imperative for Safety	Operational Excellence	EHS Knowledge and Competence	Emerging Theme
Suggestion - Perspective of Board:										
• BoD has to look at EHS performance from a Social Impact perspective - how it impacts society at large not only the organization.										Social Impact & Accountability of Organisations
• BoD has to be a very supportive body to the management team.										Safety Leadership
• BoD should be directing as opposed to leading.										Directing - Passive Leadership Style
• In terms of Risk Management there has to be very strong alignment between CEO and BoD. The primary role of the BoD is Corporate Governance and Oversight.										Alignment of Vision of EHS matters
• Good EHS from the Board must come with a strong vision										Developing a Safety Culture + Communication
• It is important that the Board ensures that a culture of continual learning exists										Continual Learning Organisations
• BoD have to set the expectations clearly for EHS and otherwise. The Governance Role of BoD needs to be established and explicit.										Clear Expectations for Safety (EHS)
• Safety and Corporate Governance Overlap strongly										Operational Excellence
• Legal imperatives for EHS are not a driver for compliance of the BoD but it is a strong influencing factor and implications for compliance can be very serious. It is the bear minimum that needs to be in place but should not be the benchmark.										Legal Imperative for Safety
• HROs – must continue to focus on the core business and thus the core business risks and not be distracted by other matters.										Good EHS - Focus on Core Business

Themes	Safety Leadership	Developing a Safety Culture + Communication	Influence and Accountability	Risk Management	Monitoring EHS Performance	Reporting Structures and Hierarchies	Legal Imperative for Safety	Operational Excellence	EHS Knowledge and Competence	Emerging Theme
Key Success Factors for Board/CEO EHS Performance:										
• Transparency is Key; Transparency has become a requirement in the industry; Transparency is very important; Transparency is key to success of the BoD/CEO dynamics.										Transparency
• Give the top guy the full ownership for Safety - BoD is an advisory body. Give full delegation and make them accountable for performance. Monitor and guide the management team.										Safety Leadership & Influence & Accountability
• There has to be a compliance culture and the setting high safety Standards is required. Board and Management must drive a compliance culture within the organization. This will eventually develop a Culture of Self-Regulation which is very important to inoculate.										Developing a Safety Culture + Communication
• Preparedness for Recovery from Incidents is Key - BoD must ensure that organizations have the light level of preparedness										Preparedness of Organisations

Themes	Safety Leadership	Developing a Safety Culture + Communication	Influence and Accountability	Risk Management	Monitoring EHS Performance	Reporting Structures and Hierarchies	Legal Imperative for Safety	Operational Excellence	EHS Knowledge and Competence	Emerging Theme
Industry Realities:										
<ul style="list-style-type: none"> The Aviation industry has been very focused on Process Safety as opposed to Personal Safety. This has been as some see it the opposite in the Oil and Gas/Process Industries. 										Re-focus on PSM
<ul style="list-style-type: none"> Operational vs. Strategic - industry accepts that the BoD is not technical so their input in EHS matters is limited. 										EHS Knowledge and Competence
<ul style="list-style-type: none"> Commercial and Financial Focus often detracts the BoD from focusing on Safety and EHS matters. 										Commercial/Financial Drivers Compete for EHS issue-attention/Conflict
<ul style="list-style-type: none"> BoD must understand the financial impact of risk management 										Risk Management
<ul style="list-style-type: none"> Aviation Industry are focused heavily on internal controls and governance rather than regulations 										Internal Controls vs. Regulation
<ul style="list-style-type: none"> Impact of Media has been big on bringing about Transparency 										Transparency
<ul style="list-style-type: none"> Aviation focus has been greatly on process safety rather than personal safety 										Focus of PSM
<ul style="list-style-type: none"> Need to understand Human Factors carefully 										Human Factors Impacts
<ul style="list-style-type: none"> EHS is about Ethics and Humanism. Thus Morality is very important to consider in this discussion of BoD and CEO behavior when it comes to safety 										Ethics & Morality
<ul style="list-style-type: none"> There are strong financial implications for safety 										Financial Implication for Safety
<ul style="list-style-type: none"> There is a strong influencing role when you have international partners. Likewise one of the main challenges also is with adjacent industries not complying and caring so much about EHS/Safety - i.e. O&G do, but construction don't care about having high standards 										Influence of International Partners is Positive
<ul style="list-style-type: none"> There is a huge impact of Global Incidents on shaping the industry attention to EHS. There is an Industry wide change taking place 										Industry Driving Change and Focus
<ul style="list-style-type: none"> The Industry as a whole has a culture which influences the company EHS culture 										Industry Driving Change and Focus
<ul style="list-style-type: none"> There are both Global & Regional Priorities for EHS which are emerging. 										Emerging Global and Regional Influences

Themes	Safety Leadership	Developing a Safety Culture + Communication	Influence and Accountability	Risk Management	Monitoring EHS Performance	Reporting Structures and Hierarchies	Legal Imperative for Safety	Operational Excellence	EHS Knowledge and Competence	Emerging Theme
Holistic Organizational Matters Relating to EHS Performance:										
• Continual Learning - Learning Organization and you must have a culture of continuous learning										Continual Learning Organisations
• EHS has to be a very independent Function										Best Practice for Independence of EHS Function
• EHS has to relate to the needs of people - it has to be aligned effectively;										Alignment with People Needs
• Good EHS = Good Business										Operational Excellence
• EHS has matured more than CSR., although EHS is a subset of CSR EHS is not a key driver - CSR can impact but requires a change in awareness										Social Impact & Accountability of Organisations
• Organization must add value socially to a country it is operating in										Social Impact & Accountability of Organisations
• EHS should report into a technical function - makes more sense and then functionally into a senior committee with CEO										EHS should be reporting to Technical Functions